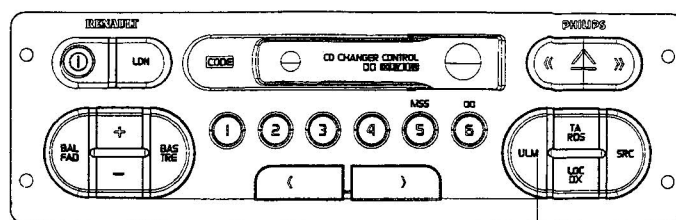


Service Service Service

22DC594/ 62E/ 62S



For repair information of the Cassette deck see Service Manual No 4822 725 25459 of Auto Cassette Deck SCA*5-4 for DC594/62E/S 4822 725 xxxxx of Auto Cassette Deck P1-18 for DC593/62E

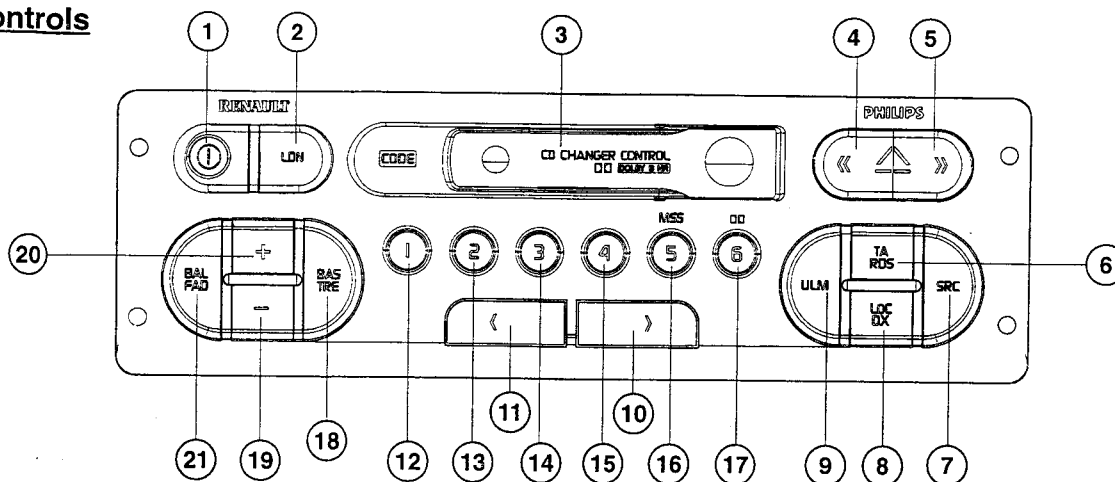
Service Manual

12V

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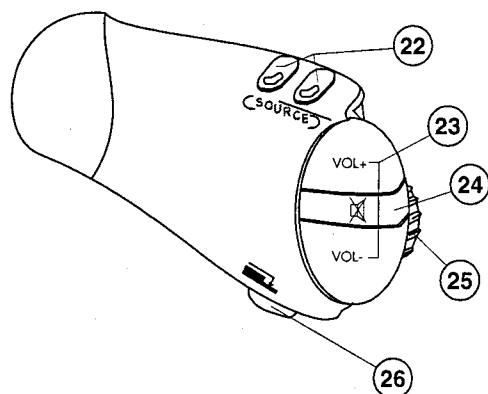


Controls



POS	22DC593/62E		22DC594/62S	22DC594/62E
1	On / Off			
2	Loudness			
3	Cassette opening + flap			
4	4 + 5 = ejection	FRW button		
5		FFW Button		
6	Info / Traffic announcement			
7	Source			
8	DX mode / Local mode			
9	Band Select			
10	Search UP			Search UP / Next track
11	Search DOWN			Search DOWN / Previous track
12	Preset 1			Preset 1 / Scan / Disk 1
13	Preset 2			Preset 2 / Scan / Disk 2
14	Preset 3			Preset 3 / Scan/ Disk 3
15	Preset 4			Preset 4 / Scan / Disk 4
16	Preset 5	Preset 5 / MSS		Preset 5 / MSS / Scan / Disk 5
17	Preset 6	Preset 6 / Dolby		Preset 6 / Dolby / Scan / Disk 6
18	Bass / Treble			
19	Vol , Bass, Treble, Balance -	Vol , Bass, Treble, Balance, Fader -		
20	Vol , Bass, Treble, Balance +	Vol , Bass, Treble, Balance, Fader +		
21	Balance	Balance / Fader		

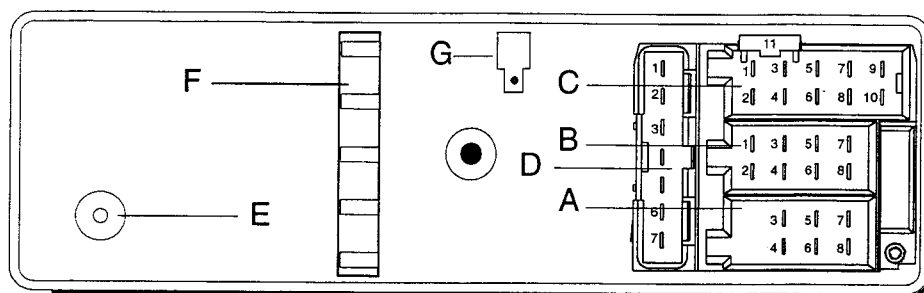
Remote control



22	Change waveband/source	
23	Vol , Bass, Treble, Balance, Fader + and - when corresponding function activated	
24	In code entry mode: SP : Validation digit Sec Code LP : Validation Sec Code	All others modes: Mute / Demute
25	In code entry mode: Selection digits Sec Code	Changing preset / Track selection
26	In code entry mode: SP : Validation digit Sec Code LP : Validation Sec Code	In radio mode: SP : search UP LP : Starts Autostore

SP : Short press LP : Long press (>2s)

CONNECTIONS



POS	FUNCTION	DC593/62E	DC594/62S	DC594/62E
A1				
A2				
A3	Mute radio (0V)	X	X	X
A4	Plus permanent	X	X	X
A5	+ Antenna	X	X	X
A6	Pilot light	X	X	X
A7	Plus accessories	X	X	X
A8	GND	X	X	X
B1	Rear right +		X	X
B2	Rear right -		X	X
B3	Front right +	X	X	X
B4	Front right -	X	X	X
B5	Front left +	X	X	X
B6	Front left -	X	X	X
B7	Rear left +		X	X
B8	Rear left -		X	X
C1	Screening D2B			X
C2	Bus D2B +			X
C3	Bus D2B -			X
C4	GND supply			X
C5	CD supply (A4)			X
C6				
C7	Info on / off (A5)			X
C8	input right			X
C9	Input left			X
C10	Input ref			X
C11	Screening CD			X
D1	Data I2C	X	X	X
D2	Clock I2C	X	X	X
D3	Mrq I2C	X	X	X
D4				
D5				
D6	+ antenna	X	X	X
D7	GND	X	X	X
E	AERIAL PLUG	X	X	X
F	Fastening cable	X	X	X

TECHNICAL DATA

GENERAL

Power supply	: 14.4V DC
Dimensions	: 180x150x51 mm
Security code	: Yes
Remote control	: Yes
Remote display	: Yes

RADIO

LW	: 153-279 KHz
MW	: 531-1602 KHz
FM	: 87.5-108 MHz
IF-AM (1/2)	: 10.7 MHz/450 KHz
IF-FM (1/2)	: 72.2 MHz/10.7 MHz
Sensitivity 26dB S/N	: <40 μ V (LW)
	: <40 μ V (MW)
	: 3.5 μ V (FM)
Limitation α -3dB	: 3 μ V < L < 14 μ V

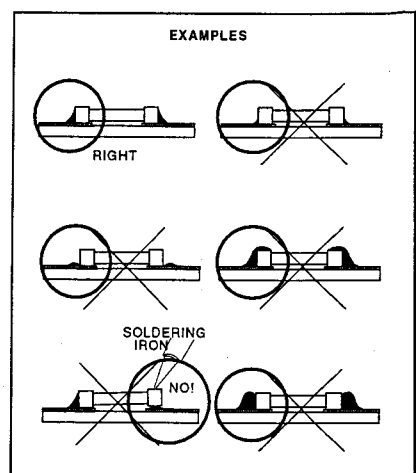
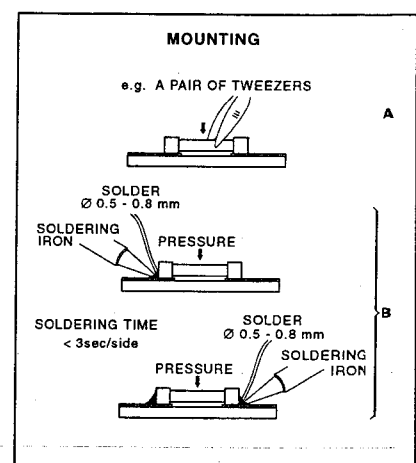
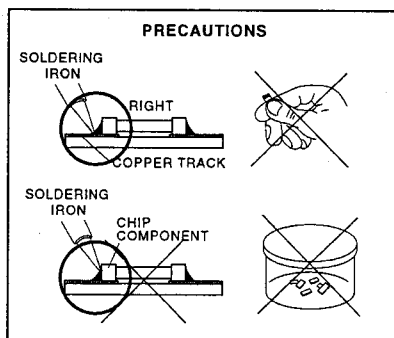
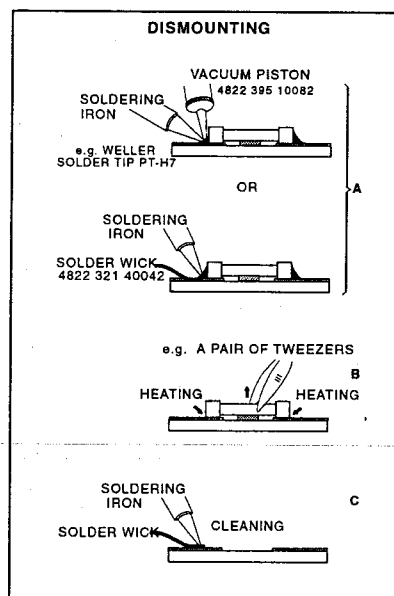
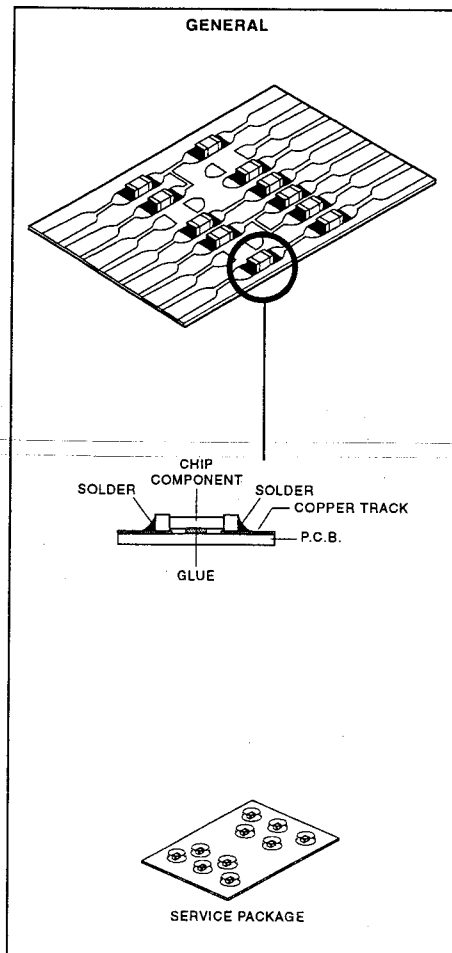
CASSETTE

Cassette mechanism	: LCA 5.4 for DC594*
	: P1.18 for DC593
Number of tracks	: 2 or 2x2*
Tape speed	: 4.76 cm/sec
Wow and flutter	: \leq 0.35%
Crosstalk	: \geq 30 dB

AMPLIFIER

Output power	: 4x15 W / 4 Ω (THD = 10%) DC594
	: 2x6 W / 4 Ω (THD = 10%) DC593
Fader control	: >12 dB (DC594 only)
Balance control	: >15 dB
Source separation	: >60 dB
Input sensitivity (CD in)	: 150 mV \pm 2 dB

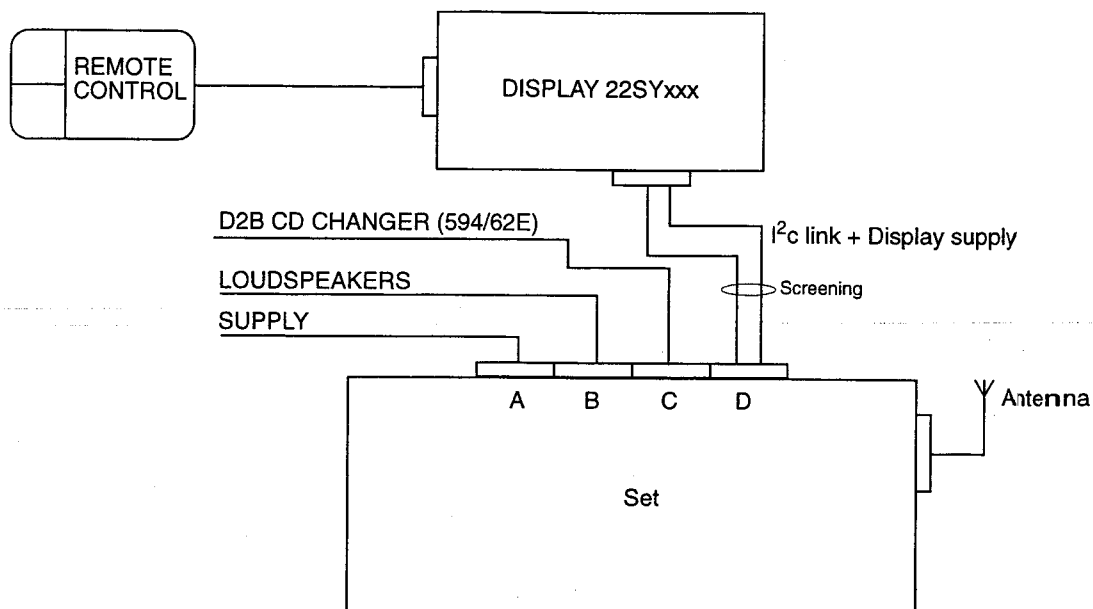
HANDLING CHIP COMPONENTS



These sets are parts of a system, composed of the following parts:

- 1)- The set 22DC593/62E, 594/62E or 594/62S.
- 2)- A remote control + cable.
- 3)- A remote display 22SY664, 654, or 656.
- 4)- A cable link between the set (connector D) and the display.

-IN CASE YOU NEED PARTS OF THIS SYSTEM, PLEASE CONTACT LOCALLY RENAULT TO GET INFO ABOUT THESE PARTS.



This set is protected by a security code. **THE CODE CAN ONLY BE ENTERED VIA THE REMOTE CONTROL**

Entering the code:

-) Press the On/Off key to switch on the set. COD and then 0000 will appear on the display.
 -) To select the four digits of the code:
 - Adjust the flashing digit with the thumbwheel on the remote control.
 - Press the [24] key or [26] key on the remote control to change the digit.
 -) Press the [24] key or [26] key for at least 2 seconds to validate the code.
- When the code is activated a bleep will be heard.

Example : you want to enter the code 7637

	Turn the thumbwheel Press [24] or [26]	Turn the thumbwheel Press [24] or [26]	Turn the thumbwheel Press [24] or [26]	Turn the thumbwheel Press [24] or [26]	Press [24] or [26] for at least 2 seconds
0000	7000	7600	7630	7637	Last heard frequency

SYSTEM TESTS

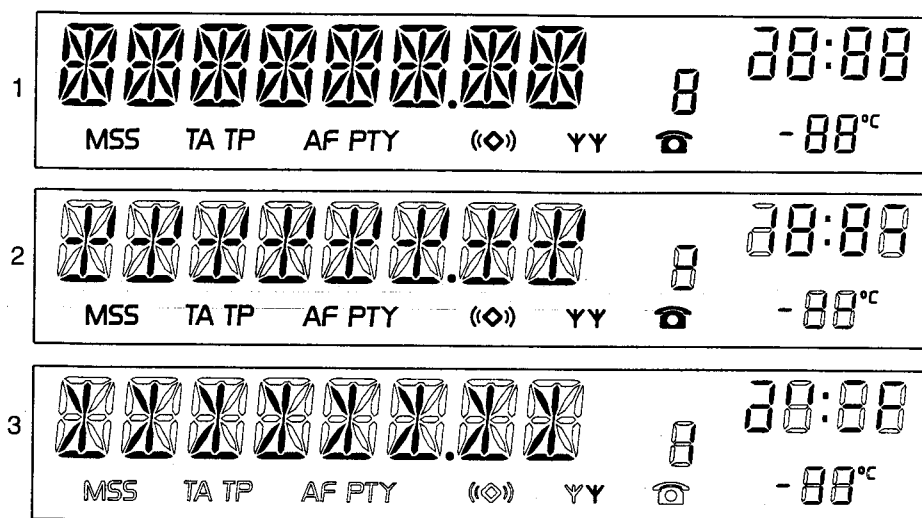
WARNING: this test needs a display 22SY656/62B to be completed

1 - Display connection check

Starting the test: supply the display with the 12V acc without radio connected or radio switched off while <Vol+>sat, <Vol->sat and <SOURCE>sat are pressed together.

If there is no problem, the following test will start.

The display shows 3 different screens:



These screens are displayed in sequence each time you press the <26>sat button. It can be aborted by Switching On the set.

2 - Keyboard test

Starting the test: press P3 and ON.

"T" is displayed to request keyboard test. For each key pressed, the number of the pressed key appears, according to the table shown below. When all 17 keys have been pressed, "TEST OK" message is displayed.

This test can be aborted at any time by switching the set OFF.

number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
key	LDN	BAL FAD	+	-	BAS TRE	Pr 1	Pr 2	Pr 3	Pr 4	Pr 5	Pr 6	ULM	TA	DX	SRC	<	>

If all is right, the display shows "KEYS OK"

3 - Check sum and Running times (Multiples of ten minutes)

At the end of the keyboard test, press P3 to start this test.

The display will show in order, during 5s each :

- 1) the checksum of the front microprocessor : CSF XXXX (depending on the software release)
- 2) the checksum of the main microprocessor : CSM XXXX (depending on the software release)
- 3) the running time in tuner mode : TU
- 4) the running time in cassette mode : TA
- 5) the running time in Cd changer mode : CDC
- 6) the running time in Traffic Announcement : TR
- 7) the running time in Telephone Call : SP
- 8) the total running time : TOT
- 9) the running time in nominal mode I²C : NOM

These indications are displayed in a loop. To end the test, switch Off the set.

22DC593/62E
22DC594/62E
22DC594/62S

INTEGRATED CIRCUITS

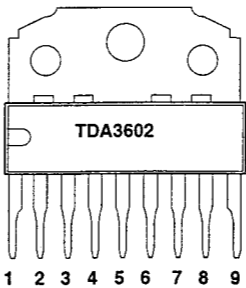
SAA6579T Radio Data System demodulator

SYMBOL	PIN	DESCRIPTION
QUAL	1	quality indication output
RDDA	2	RDS data output
V _{ref}	3	reference voltage output (0.5 V _{DDA})
MPX	4	multiplex input signal
V _{DDA}	5	+5V supply voltage for analog part
V _{SSA}	6	ground for analog part (0V)
CIN	7	subcarrier input to comparator
SCOUT	8	subcarrier output for reconstruction filter
TCTR	9	test control
TEN	10	test enable
V _{SSD}	11	ground for digital part (0V)
V _{DDD}	12	+5V supply voltage for digital part
OSCI	13	oscillator input
OSCO	14	oscillator output
T57	15	57kHz clock signal output
RDCL	16	RDS clock output



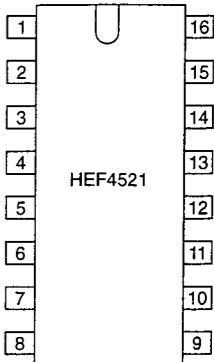
TDA3602 Multiple output voltage regulator

SYMBOL	PIN	DESCRIPTION
V _P	1	positive supply voltage
REG1	2	regulator 1 output
RESET	3	reset output
SCI	4	state control input
HOLD	5	hold output
GND	6	ground
REG3	7	regulator 3 output
V _{bu}	8	back-up
REG2	9	regulator 2 output



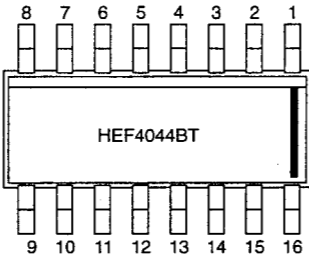
HEF4521BP 24-stage frequency divider

SYMBOL	PIN	DESCRIPTION
O ₂₄	1	output 2 ²⁴
MR	2	asynchronous master reset
V _{SS}	3	
O ₂	4	
V _{DD}	5	
I ₂	6	
O ₁	7	
V _{SS}	8	ground
I ₁	9	
O ₁₈	10	output 2 ¹⁸
O ₁₉	11	output 2 ¹⁹
O ₂₀	12	output 2 ²⁰
O ₂₁	13	output 2 ²¹
O ₂₂	14	output 2 ²²
O ₂₃	15	set input 3 (active LOW)
V _{DD}	16	power supply



HEF4044BT Quad R/S latch with 3-state outputs

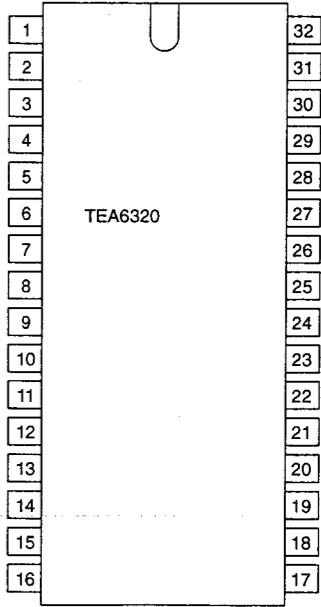
SYMBOL	PIN	DESCRIPTION
O ₃	1	3-state buffered latch output 3
n.c.	2	
S ₀	3	set input 0 (active LOW)
R ₀	4	reset input 0 (active LOW)
E ₀	5	common output enable input
R ₁	6	reset input 1 (active LOW)
S ₁	7	set input 1 (active LOW)
V _{SS}	8	ground
O ₁	9	3-state buffered latch output 1
O ₂	10	3-state buffered latch output 2
S ₂	11	set input 2 (active LOW)
R ₂	12	reset input 2 (active LOW)
O ₀	13	3-state buffered latch output 0
R ₃	14	reset input 3 (active LOW)
S ₃	15	set input 3 (active LOW)
V _{DD}	16	supply



inputs			output
E ₀	S _n	R _n	O _n
L	X	X	Z
H	L	H	H
H	X	L	L
H	H	H	latched
Z = high impedance OFF-state			

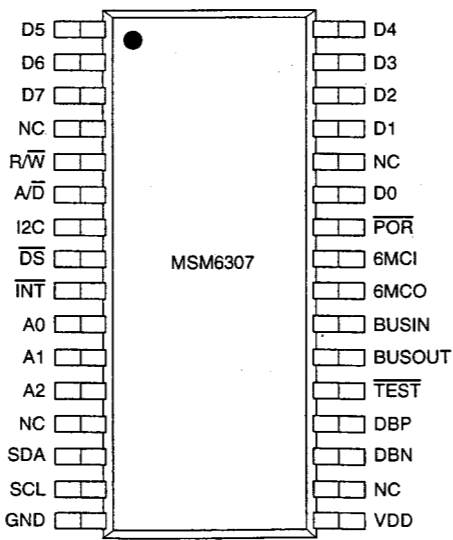
TEA6320 SOFAC (SOund FAder Control circuit)

SYMBOL	PIN	DESCRIPTION	SYMBOL	PIN	DESCRIPTION
SDA	1	serial data input/output	IAR	17	input A right source
GND	2	ground	IBR	18	input B right source
OUTLR	3	output left rear	CAP	19	electronic filtering for supply
OUTLF	4	output left front	ICR	20	input C right source
TL	5	treble control capacitor left channel or input from an external equalizer	V _{ref}	21	reference voltage (0.5Vcc)
B2L	6	bass control capacitor left channel or output to an external equalizer	IDR	22	input D right source
B1L	7	bass control capacitor, left channel	QSR	23	output source selector right channel
IVL	8	input volume I, left control part	ILR	24	input loudness right channel
ILL	9	input loudness, left control part	IVR	25	input volume I, right control part
QSL	10	output source selector, left channel	B1R	26	bass control capacitor, right channel
IDL	11	input D left source	B2R		bass control capacitor right channel or output to an external equalizer
MUTE	12	mute control	TR	28	treble control capacitor right channel or input from an external equalizer
ICL	13	input C left source	OUTRF	29	output right front
IMO	14	input mono source	OUTRR	30	output right rear
IBL	15	input B left source	Vcc	31	supply voltage
IAL	16	input A left source	SCL	32	serial clock input

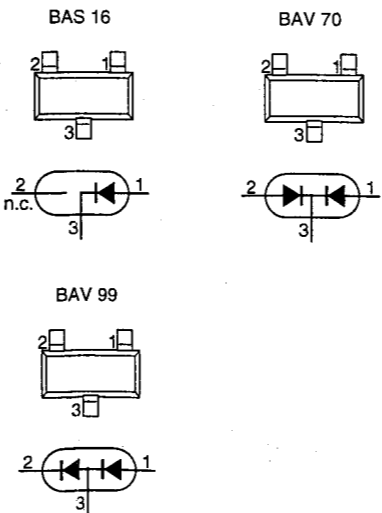


MSM6307GS D²B IC

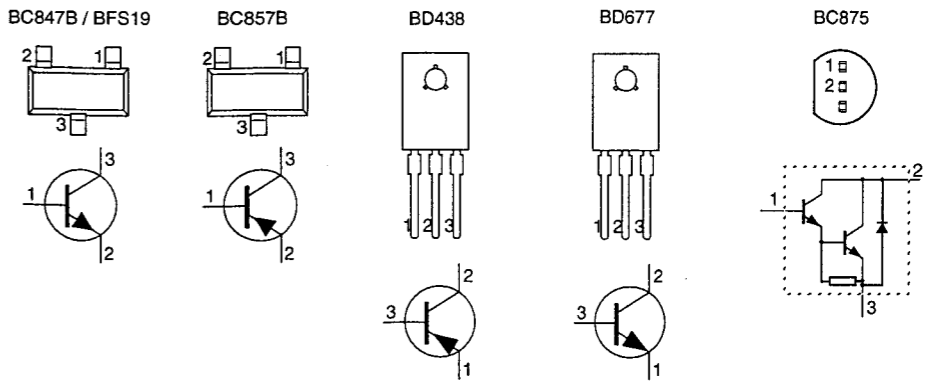
SYMBOL	I/O	DESCRIPTION
POR	I	Power on - reset
R / W	I	Read / Write selector
DS	I	Data strobe to access data bus
A / D	I	Selects address or data on D0 - d7
SDA	I/O	I ² C data signal input / output
SCL	I/O	I ² C clock signal input / output
I2C	I	Selects I ² C or parallel interface
INT	O	Interrupt output
BUSIN	I	D2B input (TTL level)
BUSOUT	O	D2B output (TTL level)
DBN & DBP	I/Os	Differential D2B lines of the internal driver/ receiver, to be terminated with 60Ω
TEST	I	Selects the test mode for factory purposes
6MCI	I	Clock input 6MHz resonator or X-TAL
6MCO	O	Clock output 6MHz resonator or X-TAL
D0 - D7	I/Os	8-bit bi-directional address or data bus
A0 - A2	I	Programmable I ² C slave addresses



DIODES



TRANSISTORS



DC VOLTAGES

All measurements in FM, set tuned, 0dB at output.
All settings in mid position. Values are given for indication only.

IC91 TUNER MODULE

1 = 0.5 V	11 = 2.9 V
2 = GND	12 = 4.7 V
3 = N.C.	13 = 4.9 V
4 = N.C.	14 = 4.8 V
5 = N.C.	15 = N.C.
6 = 4.9 V	16 = 3.6 V
7 = 8.3 V	17 = 3.6 V
8 = GND	18 = 0.0 V
9 = 4.9 V	19 = N.C.
10 = 4.6 V	20 = N.C.

7257 LA2000

1 = 1.8 V	6 = 5.0 V
2 = 7.3 V	7 = N.C.
3 = 2.1 V	8 = N.C.
4 = N.C.	9 = 8.5 V
5 = GND	

7350 TDA8579T

1 = 4.8 V	5 = GND
2 = 5.0 V	6 = 4.4 V
3 = 4.8 V	7 = 4.4 V
4 = 5.2 V	8 = 8.5 V

7354 TEA6320

1 = 5.0 V	17 = 3.7 V
2 = GND	18 = 3.9 V
3 = 3.6 V	19 = 7.6 V
4 = 3.9 V	20 = 4.4 V
5 = 3.9 V	21 = 3.9 V
6 = 3.9 V	22 = N.C.
7 = 3.9 V	23 = 3.7 V
8 = 3.5 V	24 = 3.8 V
9 = 3.8 V	25 = 3.5 V
10 = 3.7 V	26 = 3.9 V
11 = N.C.	27 = 3.9 V
12 = 7.6 V	28 = 3.9 V
13 = 4.4 V	29 = 3.9 V
14 = 3.8 V	30 = 3.9 V
15 = 3.9 V	31 = 7.6 V
16 = 3.6 V	32 = 5.0 V

7355 SAA6579T

1 = N.C.	9 = GND
2 = 3.1 V	10 = GND
3 = 2.5 V	11 = GND
4 = 2.5 V	12 = 4.9 V
5 = 4.9 V	13 = 4.332 MHz
6 = GND	14 = 4.332 MHz
7 = 2.3 V	15 = N.C.
8 = 2.5 V	16 = 3.5 V

7356 TL074

1 = 4.2 V	8 = 4.2 V
2 = 4.2 V	9 = 4.3 V
3 = 4.1 V	10 = 4.1 V
4 = 8.2 V	11 = GND
5 = 4.1 V	12 = 4.2 V
6 = 4.3 V	13 = 4.2 V
7 = 4.2 V	14 = 4.2 V

7551 TDA7374

1 = 7.0 V	9 = GND
2 = 7.0 V	10 = 0.0 V
3 = 14.4 V	11 = 0.7 V
4 = 0.7 V	12 = 0.7 V
5 = 0.7 V	13 = 14.4 V
6 = 0.7 V	14 = 7.0 V
7 = 3.3 V	15 = 7.0 V
8 = Earth	

7251 TEA0675T

1 = 4.0 V	13 = 4.0 V
2 = 3.4 V	14 = GND
3 = 3.9 V	15 = N.C.
4 = 3.9 V	16 = GND
5 = 3.9 V	17 = 4.0 V
6 = 5.6 V	18 = 4.0 V
7 = 4.0 V	19 = 4.5 V
8 = 4.0 V	20 = 3.9 V
9 = 8.2 V	21 = 0.6 V
10 = 3.6 V	22 = 3.4 V
11 = 4.0 V	23 = 3.0 V
12 = 4.0 V	24 = 4.0 V

7601 ST24C16

1 = 5.0 V	5 = 5.0 V SDA
2 = 5.0 V	6 = 5.0 V SCL
3 = 5.0 V	7 = GND
4 = GND	8 = 5.0 V

7602 HEF4521

1 = N.C.	9 = 2.5 V
2 = GND	10 = 1 Hz
3 = GND	11 = N.C.
4 = 3.5 V	12 = N.C.
5 = 5.0 V	13 = N.C.
6 = 3.5 V	14 = N.C.
7 = 3.5 V	15 = N.C.
8 = GND	16 = 5.0 V

7603 MSM6307GS

1 = 5.0 V	17 = 5.0 V
2 = 5.0 V	18 = N.C.
3 = 5.0 V	19 = 2.3 V
4 = N.C.	20 = 2.3 V
5 = 5.0 V	21 = 5.0 V
6 = 5.0 V	22 = N.C.
7 = 5.0 V	23 = 5.0 V
8 = 5.0 V	24 = 5.75 MHz
9 = 5.0 V	25 = 5.75 MHz
10 = 5.0 V	26 = 4.8 V
11 = 5.0 V	27 = 5.0 V
12 = 5.0 V	28 = N.C.
13 = N.C.	29 = 5.0 V
14 = 4.9 V SDA	30 = 5.0 V
15 = 4.9 V SCL	31 = 5.0 V
16 = GND	32 = 5.0 V

7800 TDA3602

1 = 13.4 V	6 = GND
2 = 8.5 V	7 = 5.0 V
3 = N.C.	8 = 13.2 V
4 = 0.6 V	9 = 5.0 V
5 = 5.0 V	

7826 HEF 4044BT

1 = 0.0 V	9 = 5.0 V
2 = N.C.	10 = 0.0 V
3 = 3.5 V	11 = 4.8 V
4 = 4.6 V	12 = 5.0 V
5 = 5.0 V	13 = 5.0 V
6 = 4.0 V	14 = 5.0 V
7 = 5.0 V	15 = 5.0 V
8 = GND	16 = 5.0 V

Check and Alignment

No alignment is needed for radio part. IC91 tuner is pre-aligned.

For all measurement, please refer to "General Check & Alignment procedures for Car Systems"
4822 725 25456

Dolby alignment:

cassette	adjust	
MTT 150 F = 400 Hz/ 200 nWb	3260 and 3261	AC voltage at pin 1 & 24 of 7251 = 387.5 mV +/- 50mV

Checks:

Supply voltages (set Off)

SET OFF	Voltage	Current + Acc ON	Current + Acc OFF	Pin 14 μP	Pin 69 μP
Acc supply	+14.4V	< 20mA		min 4.8V max 5.2V	max 0.8V
Perm supply	+14.4V	< 3mA	< 3mA		

Supply voltages (set On)

device	μP	μP	μP	TDA3602	TDA3602	EEProm
pin	30 (reset)	14 (supply)	69 (hold)	9 (5V)	2 (8.5V)	8
Voltage	max 0.8V	min 4.8V max 5.2V	min 2.0V max 5.7V	min 4.8V max 5.2V	min 8.2V max 8.8V	min 4.8V max 5.2V

Reference oscillator frequencies

device	MSM 6307	μP	SAA6579T
pin	24 & 25	51 & 52	13 & 14
frequency	6 MHz 0.5%	11.5 MHz 0.5%	4.332 MHz 60 ppm

FM mute:

98 MHz 1mV	output at load resistor R & L = 775 mV = REF
no signal	output should be < -20 dB (REF - 20 dB)

Demodulated FM levels

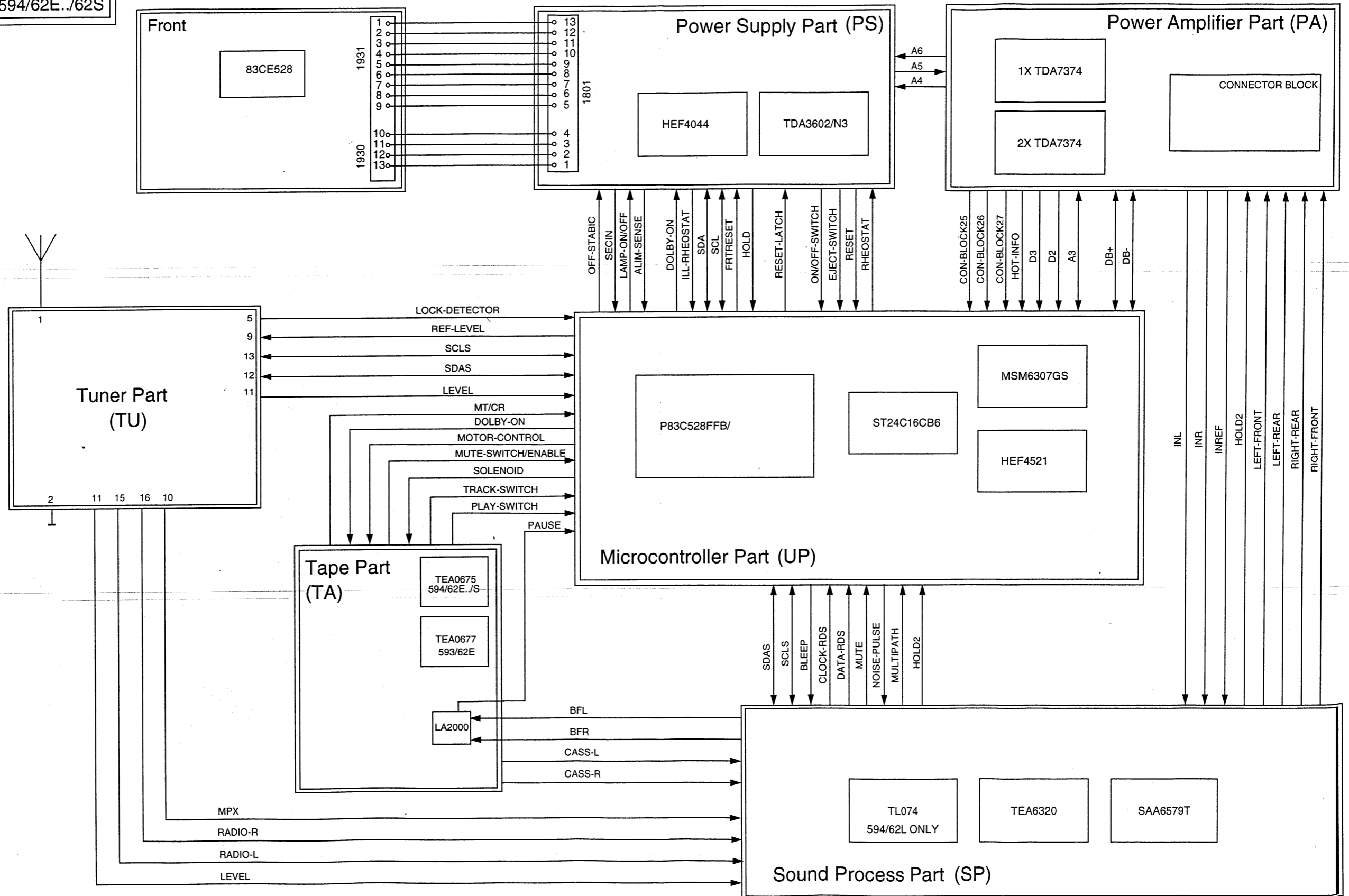
Input	Output of IC91 (pin 16 & 17)
98 MHz	300 mV ± 50 mV

Limiting point α-3dB

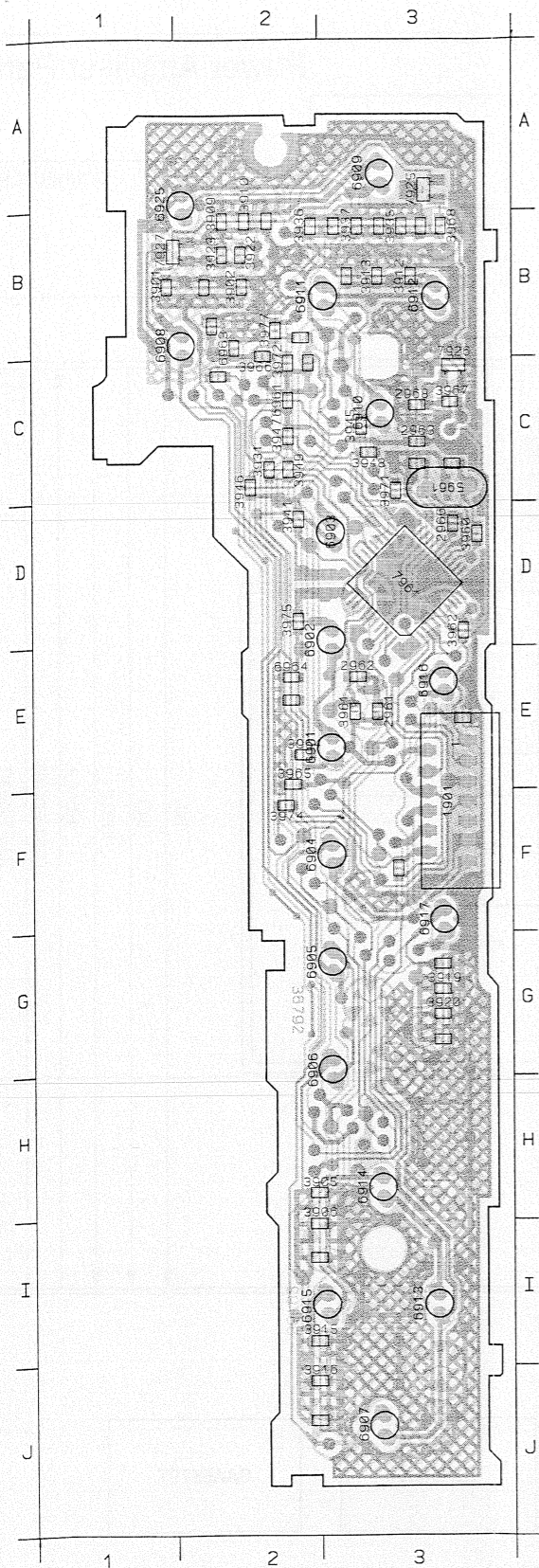
Range	Input	min	nominal	max
87.5 to 108 MHz	1mV 400Hz	3μV	5.5μV	14μV

22DC593/62E
22DC594/62E..1/2 S

BLOCK DIAGRAM
22DC593/62E
22DC594/62E../62S














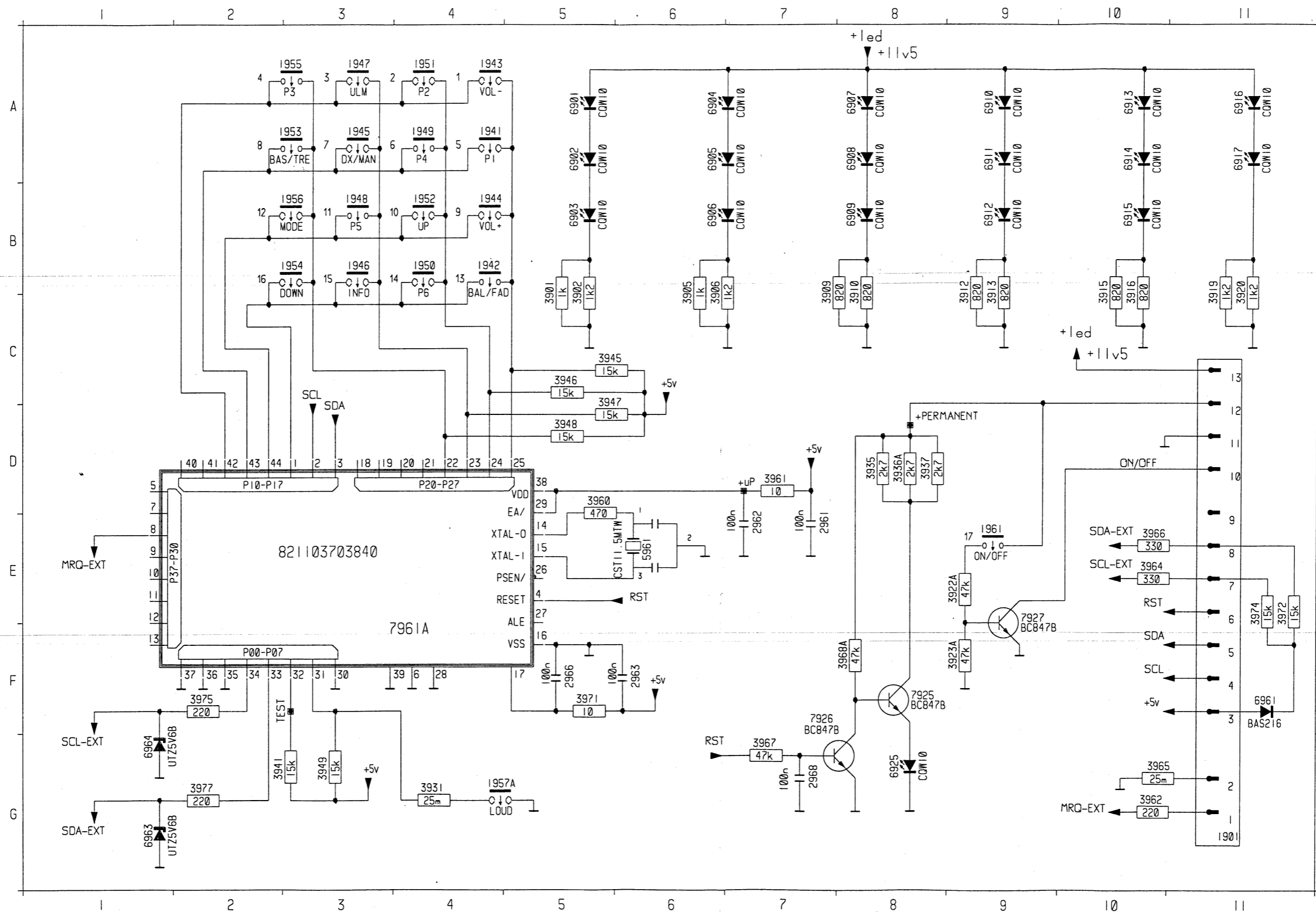
FRONT PWB



1901	F3	6908	B2
2961	E3	6909	A3
2962	E3	6910	C3
2963	C3	6911	B3
2966	D3	6912	B3
2968	C3	6913	I3
3901	B1	6914	H3
3902	B2	6915	I3
3905	H2	6916	E3
3906	H2	6917	F3
3909	B2	6925	A2
3910	A2	6961	C2
3912	B3	6963	B2
3913	B3	6964	E2
3915	I2	7925	A3
3916	J2	7926	C3
3919	G3	7927	B1
3920	G3	7961	D3
3922	B2		
3923	B2		
3931	C2		
3935	B3		
3936	B2		
3937	B3		
3941	D2		
3945	C3		
3946	C2		
3947	C2		
3948	C3		
3949	C2		
3960	D3		
3961	E3		
3962	D3		
3964	E2		
3965	E2		
3966	B2		
3967	C3		
3968	B3		
3971	C3		
3972	C2		
3974	F2		
3975	D2		
3977	B2		
5961	C3		
6901	E3		
6902	D3		
6903	D3		
6904	F3		
6905	G3		
6906	G3		
6907	J3		

22DC593/62E
22DC594/62E../62S

II			   		
2961	4822 126 13196	100N 10% 25V X7R 0805	6961	4822 130 83757	DIODE BAS216
2962	4822 126 13196	100N 10% 25V X7R 0805	6963	4822 130 10185	DIODE REG SM UDZ5.6B
2963	4822 126 13196	100N 10% 25V X7R 0805	6964	4822 130 10185	DIODE REG SM UDZ5.6B
2966	4822 126 13196	100N 10% 25V X7R 0805	 		
2968	4822 126 13196	100N 10% 25V X7R 0805			
					
3901	4822 051 20102	1K00 5% 0,1W	7925	4822 130 60511	BC847B
3902	4822 051 20122	1K20 5% 0,1W	7926	4822 130 60511	BC847B
3905	4822 051 20102	1K00 5% 0,1W	7927	4822 130 60511	BC847B
3906	4822 051 20122	1K20 5% 0,1W	7961	4822 209 13611	P83CE528EFB/017
3909	4822 051 20821	820R00 5% 0,1W			
3910	4822 051 20821	820R00 5% 0,1W			
3912	4822 051 20821	820R00 5% 0,1W			
3913	4822 051 20821	820R00 5% 0,1W			
3915	4822 051 20821	820R00 5% 0,1W			
3916	4822 051 20821	820R00 5% 0,1W			
3919	4822 051 20122	1K2 5% RC11 0805			
3920	4822 051 20122	1K2 5% RC11 0805			
3922	4822 051 20473	47K 5% 0805 RC11			
3923	4822 051 20473	47K 5% 0805 RC11			
3935	4822 051 20272	2K70 5% 0,1W			
3936	4822 051 20272	2K70 5% 0,1W			
3937	4822 051 20272	2K70 5% 0,1W			
3941	4822 051 20223	22K 5% RC11 0805			
3945	4822 051 20153	15K 5% 0805 RC11			
3946	4822 051 20153	15K 5% 0805 RC11			
3947	4822 051 20153	15K 5% 0805 RC11			
3948	4822 051 20153	15K 5% 0805 RC11			
3949	4822 051 20153	15K 5% 0805 RC11			
3961	4822 051 20109	10R00 5% 0,1W			
3962	4822 051 20221	220R 5% 0805 RC11			
3964	4822 051 20331	330R 5% RC11 0805			
3965	4822 051 20008	CHIP JUMPER MAX 0R05			
3967	4822 051 20473	47K 5% RC11 0805			
3968	4822 051 20473	47K 5% RC11 0805			
3971	4822 051 20221	220R 5% RC11 0805			
3972	4822 051 20153	15K 5% RC11 0805			
3973	4822 051 20153	15K 5% RC11 0805			
3975	4822 051 20221	220R 5% RC11 0805			
3977	4822 051 20221	220R 5% RC11 0805			
   					
5961	4822 242 10435	CER RES 12MHZ			
6901	4822 130 10417	LED SM LOT670-JK-E9139/40			
6902	4822 130 10417	LED SM LOT670-JK-E9139/40			
6903	4822 130 10417	LED SM LOT670-JK-E9139/40			
6904	4822 130 10417	LED SM LOT670-JK-E9139/40			
6905	4822 130 83963	LED LO3360 ORANGE			
6906	4822 130 83963	LED LO3360 ORANGE			
6907	4822 130 83963	LED LO3360 ORANGE			
6908	4822 130 83963	LED LO3360 ORANGE			
6909	4822 130 83963	LED LO3360 ORANGE			
6910	4822 130 83963	LED LO3360 ORANGE			
6911	4822 130 83963	LED LO3360 ORANGE			
6912	4822 130 83963	LED LO3360 ORANGE			
6913	4822 130 83963	LED LO3360 ORANGE			
6914	4822 130 83963	LED LO3360 ORANGE			
6915	4822 130 83963	LED LO3360 ORANGE			
6916	4822 130 83963	LED LO3360 ORANGE			
6917	4822 130 83963	LED LO3360 ORANGE			
6925	4822 130 83963	LED LO3360 ORANGE			

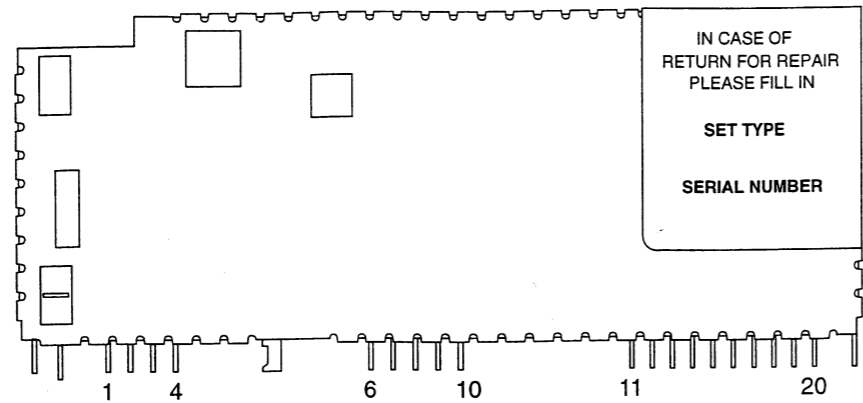


1901	G11	3967	G 7
1941	A 4	3968	F 8
1942	B 4	3971	F 5
1943	A 4	3972	E11
1944	B 4	3974	E11
1945	A 3	3975	F 2
1946	B 3	3977	G 2
1947	A 3	5961	E 6
1948	B 3	6901	A 5
1949	A 4	6902	A 5
1950	B 4	6903	B 5
1951	A 4	6904	A 6
1952	B 4	6905	A 6
1953	A 3	6906	B 6
1954	B 3	6907	A 8
1955	A 3	6908	A 8
1956	B 3	6909	B 8
1957	G 4	6910	A 9
1961	E 9	6911	A 9
2961	E 7	6912	B 9
2962	E 7	6913	A10
2963	F 6	6914	A10
2966	F 5	6915	B10
2968	G 7	6916	A11
3901	B 5	6917	A11
3902	B 5	6925	G 8
3905	B 6	6961	F11
3906	B 6	6963	G 1
3909	B 7	6964	G 1
3910	B 8	7925	F 8
3912	B 8	7926	F 7
3913	B 9	7927	E 9
3915	B10	7961	F 3
3916	B10		
3919	B11		
3920	B11		
3922	E 9		
3923	F 9		
3931	G 4		
3935	D 8		
3936	D 8		
3937	D 8		
3941	G 2		
3945	C 5		
3946	C 5		
3947	D 5		
3948	D 5		
3949	G 3		
3960	D 5		
3961	D 7		
3962	G10		
3964	E10		
3965	G10		
3966	E10		

IC91 MODULE

Do not open nor try to repair yourself!

This module is a Service Part as a complete sub-assembly and must be ordered with the normal procedure.



Connections

- | | |
|------------------------|----------------------------------|
| 1 AM/FM Aerial input | 11 Multiplex / RDS output signal |
| 2 Ground | 12 Unweighted level output |
| 3 Not used | 13 I ² C SDA |
| 4 Not used | 14 I ² C SCL |
| | 15 Not used |
| 6 Output lock detector | 16 Output Left |
| 7 Vcc 8.5V | 17 Output Right |
| 8 Ground | 18 Ground |
| 9 Vcc 5.0V | 19 Not used |
| 10 V reference | 20 Not used |

Quick reference data:

1) AM part

- Longwave/Mediumwave 144-1710 KHz
- Shortwave 5900-6250 KHz
- AM double super concept
- AM IF1 10.7MHz
- AM IF2 450KHz
- First VCO frequency above input signal frequency
- Second X-tal oscillator frequency below IF1
- Usable sensitivity $\alpha 26\text{dB MW} = 14\mu\text{V typ.}$

1) FM part

- FM 87.5 - 108MHz
- FM double super concept
- FM IF1 72.2MHz
- FM IF2 10.7MHz
- First VCO frequency above input signal frequency
- Second X-tal oscillator frequency below IF1
- Usable sensitivity $\alpha 26\text{dB} = 2.5\mu\text{V typ.}$
- THD 1mV $\delta f = 75\text{KHz} = 0.4\% \text{ typ}$
- Signal to noise ratio = 65dB typ
- Locktime synthesizer <2mSec

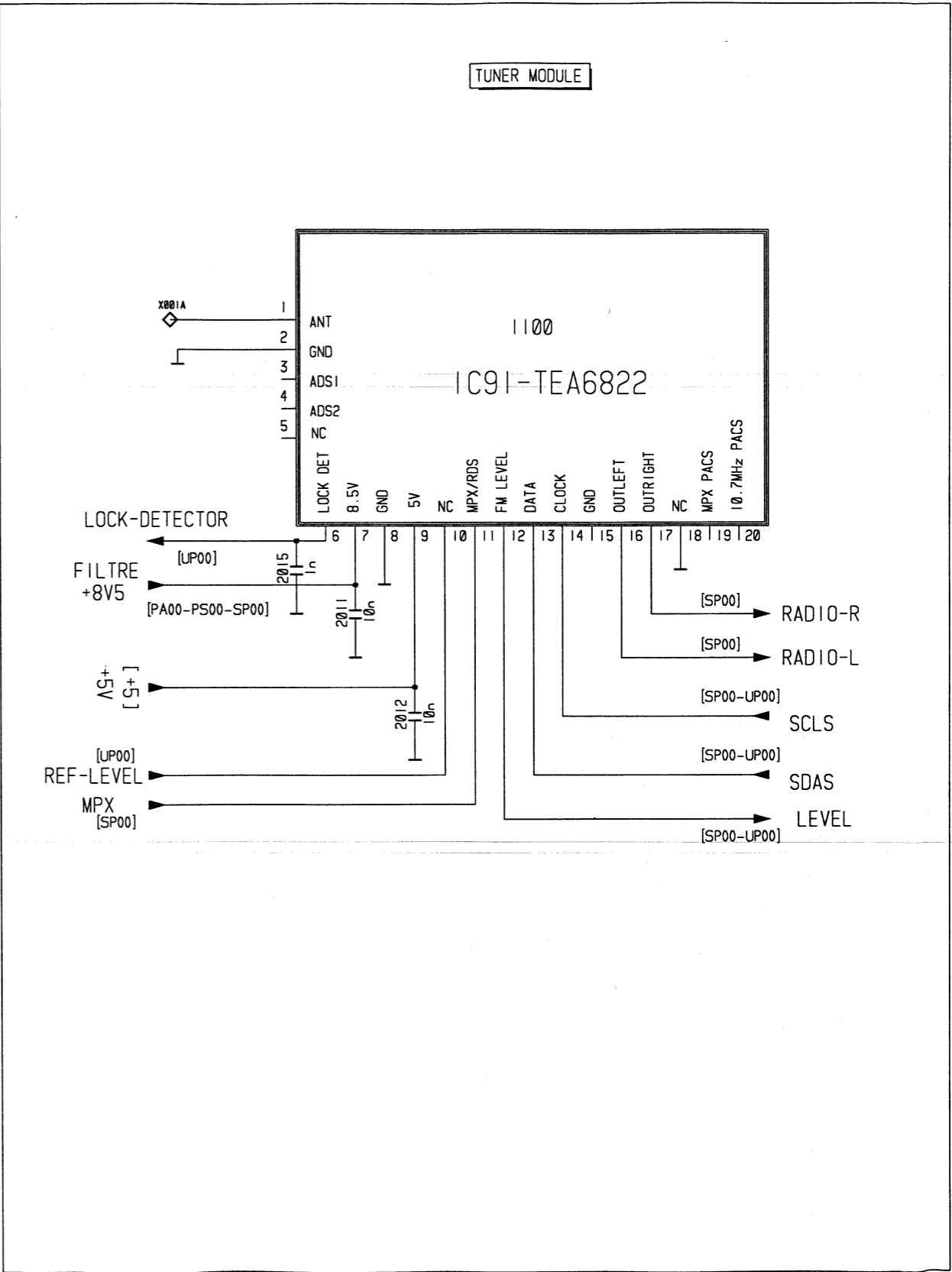


WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

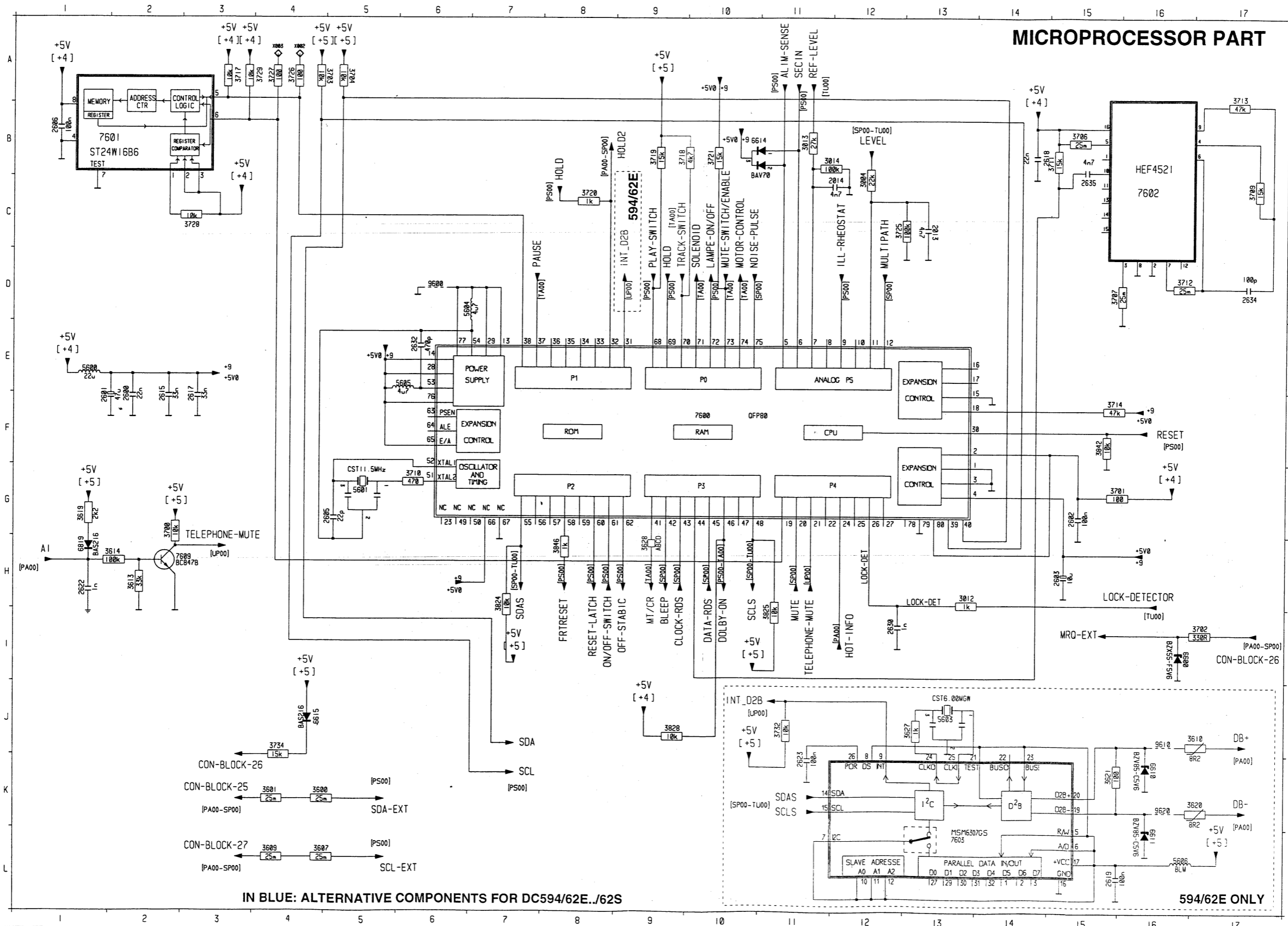
ESD equipment available:

Anti-static table mat large 100X650X1.25mm	4822 466 10953
small 600X650X1.25mm	4822 466 10958
Connection box (1Mohm)	4822 395 10223
Extendible cable (to connect wrist band to connection box)	4822 320 11307
Connecting cable (to connect table mat to connection box)	4822 320 11305
Earth cable (to connect any product to mat or box)	4822 320 11308
Complete kit ESD3 (combining all above products)	4822 310 10671
wristband tester	4822 344 13999



22DC593/62E
22DC594/62E../62S

A3.....H1	CLOCK-RDS.....H9	FRTRSET.....H8	INT_D2B.....J11	MT/CR.....H9	ON/OFF-SWITCH.....H8	SCL.....C5	SECIN.....D11
ALIM-SENSE.....D11	DATA-RDS.....H10	HOLD.....B8/D9	LAMPE-ON/OFF.....D10	MULTIPATH.....D12	PAUSE.....D7	SCL-EXT.....L6	SOLENOID.....D10
BLEEP.....H9	DB+.....J17	HOLD2.....B8	LEVEL.....B12	MUTE.....H11	PLAY-SWITCH.....D9	SCLS.....H10/K11	TELEPHONE-MUTE.....H11
CONN-BLOCK-25.....L3	DB-.....K17	HOT-INFO.....H16	LOCK-DETECTOR.....H16	MUTE-SWITCH/ENABLE.....D10	REF-LEVEL.....A11	SDA.....B5	TELEPHONE-MUTE.....H3
CONN-BLOCK-26.....K3/I17	DOLBY-B/C.....H10	ILL-RHEOSTAT.....D12	MOTOR-CONTROL.....D10	NOISE-PULSE.....D10	RESET.....F16	SDA-EXT.....L6	TRACK-SWITCH.....D9
CONN-BLOCK-27.....L3	DOLBY-ON.....H10	INT_D2B.....D9	MRQ-EXT.....I15	OFF-STABIC.....H9	RESET-LATCH.....H8	SDAS.....H7/K11	



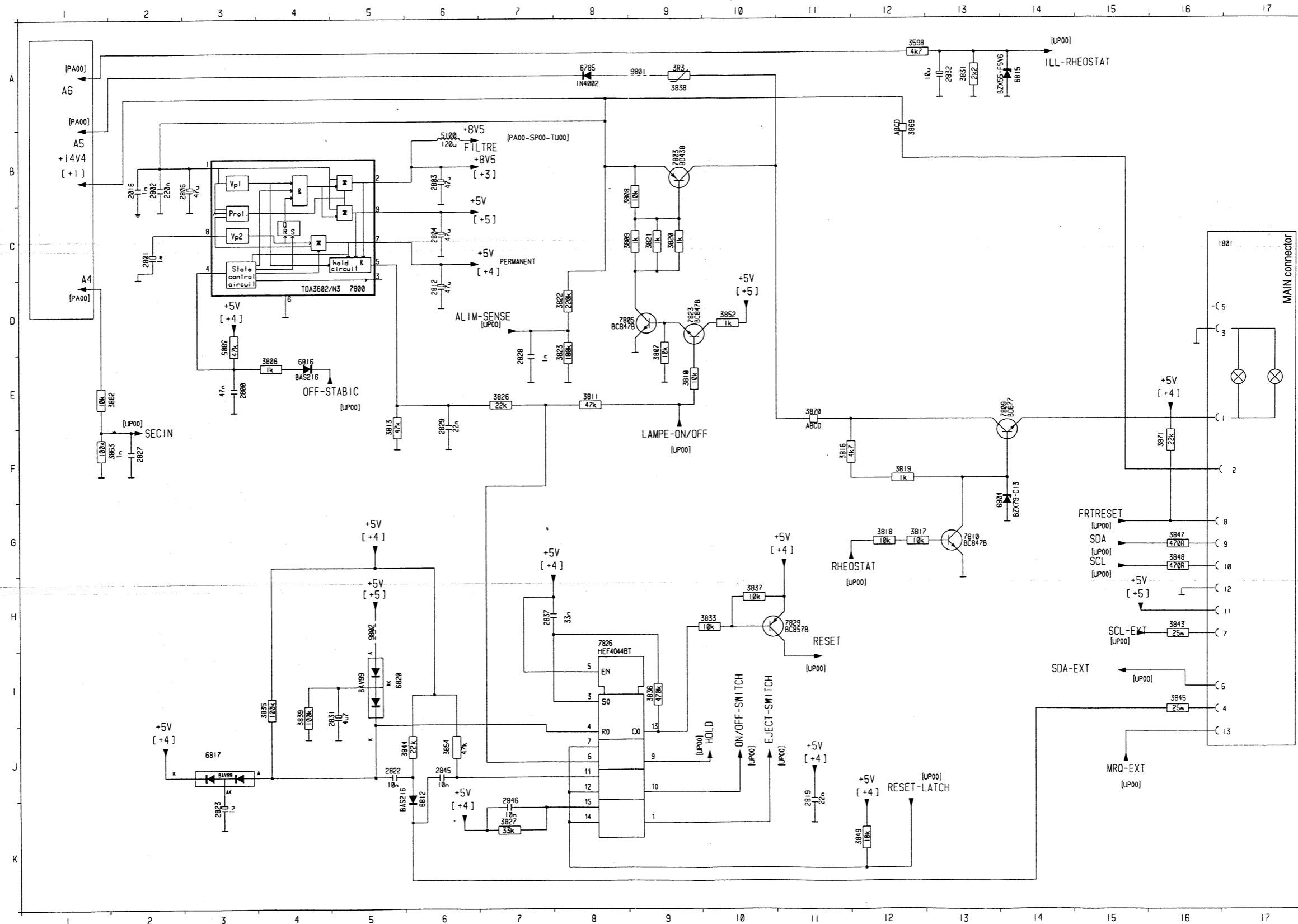
2013 C13	6819 H 1
2014 C12	7600 F10
2600 F 2	7601 B 1
2601 F 1	7602 C16
2602 G15	7603 L13
2603 H15	7609 H 2
2605 G 5	9600 D 6
2606 B 1	9610 J16
2615 F 2	9620 K16
2617 F 3	
2618 B14	
2619 L15	
2622 H 1	
2623 J11	
2630 I12	
2632 E 6	
2634 D17	
2635 C15	
3004 C12	
3012 H13	
3013 B11	
3014 B11	
3600 K 4	
3601 K 4	
3607 L 4	
3609 L 4	
3610 J17	
3613 H 2	
3614 H 2	
3619 G 1	
3620 K17	
3621 K15	
3627 J13	
3628 H 9	
3700 G 2	
3701 G15	
3702 I17	
3703 A 5	
3704 A 5	
3706 B15	
3707 D15	
3709 C17	
3710 G 6	
3711 B15	
3712 D16	
3713 A17	
3714 F15	
3717 A 3	
3718 B 9	
3719 B 9	
3720 C 8	
3721 B10	
3725 C12	
3726 A 4	
3727 A 4	
3728 C 3	
3729 A 4	
3732 J11	
3734 K 4	
3824 H 7	
3825 I11	
3828 J 9	
3842 F15	
3846 H 8	
5600 E 1	
5601 G 5	
5603 J13	
5604 D 6	
5605 E 6	
5606 L16	
6600 I16	
6610 K16	
6611 K16	
6614 B10	
6615 J 4	

22DC593/62E
22DC594/62E
22DC594/62S

8	2011	G 8	2605	F 3	3404	F 8	3734	D 3
	2012	G 8	2606	G 3	3405	F 8	3805	A 3
	2013	E 8	2615	D 3	3406	F 7	3806	D 2
	2014	G 8	2617	E 5	3407	F 7	3807	B 3
	2015	G 8	2618	G 3	3408	F 7	3808	B 2
	2016	A 4	2619	E 5	3409	F 8	3810	B 2
	2250	J 3	2622	B 8	3412	F 7	3811	B 2
	2251	J 2	2623	E 6	3413	G 7	3813	A 3
	2252	I 3	2630	F 5	3422	J 6	3816	B 2
	2253	J 3	2632	F 3	3423	I 5	3817	C 2
8	2254	J 4	2634	G 1	3425	G 4	3818	C 2
	2255	I 3	2635	G 2	3426	G 4	3819	B 1
	2266	H 2	2800	A 3	3432	G 4	3822	D 2
	2275	H 2	2802	B 3	3505	G 2	3823	D 3
	2276	J 2	2819	D 2	3507	I 1	3824	G 6
	2280	H 2	2822	D 2	3511	I 2	3825	G 5
7	2281	J 2	2827	D 4	3563	B 5	3826	A 3
	2282	J 2	2828	D 3	3564	C 5	3827	E 1
	2283	H 2	2829	A 3	3565	C 5	3828	G 3
	2284	H 2	2837	D 2	3584	B 4	3831	E 6
	2285	H 2	2845	E 1	3586	B 4	3833	F 2
	2288	J 1	2846	F 1	3587	C 4	3835	D 2
	2290	H 2	3004	E 8	3592	G 6	3836	E 2
	2292	H 4	3012	H 8	3598	D 7	3837	F 3
	2293	I 5	3013	G 8	3599	H 6	3839	F 2
	6	2294	I 5	3014	G 8	3600	E 5	3842
2295		H 5	3248	J 3	3601	E 6	3843	D 2
2366		H 4	3249	I 3	3602	C 6	3844	D 1
2372		I 6	3250	J 2	3603	C 6	3845	E 1
2373		H 6	3251	J 3	3604	C 6	3846	E 2
2374		I 6	3252	J 4	3605	C 7	3847	A 1
5	2375	I 6	3253	J 4	3607	E 5	3848	B 2
	2376	I 6	3254	J 3	3609	E 5	3849	E 2
	2378	J 6	3255	I 2	3611	B 4	3852	B 3
	2379	I 6	3257	I 2	3612	D 6	3854	E 1
	2380	I 6	3258	I 2	3613	C 7	3863	D 7
	2381	H 5	3259	J 3	3614	D 7	3869	C 2
	2395	H 4	3262	I 3	3619	D 7	3870	B 2
	2397	H 4	3263	I 1	3621	E 7	3871	C 3
	2398	H 4	3264	I 1	3626	C 5	5400	G 8
	4	2403	G 7	3266	D 4	3627	E 6	6354
2404		G 7	3267	C 3	3628	G 3	6355	G 4
2405		G 8	3268	C 4	3634	B 6	6403	F 6
2407		H 8	3270	C 4	3635	A 6	6574	C 5
2408		H 7	3271	C 4	3636	B 5	6575	B 6
2410		G 7	3274	D 4	3637	B 4	6610	E 6
3	2415	F 8	3275	J 2	3638	B 6	6611	E 7
	2416	F 8	3276	H 3	3639	B 6	6614	D 4
	2417	F 8	3277	H 1	3640	A 8	6615	C 7
	2419	E 7	3278	I 2	3641	B 7	6812	D 1
	2420	F 8	3279	J 2	3700	D 7	6816	D 2
	2421	F 8	3280	H 2	3701	D 3	6817	F 2
	2422	F 8	3281	H 2	3702	E 7	6819	D 7
	2423	F 7	3282	C 4	3703	G 4	6820	G 2
	2424	F 7	3288	C 3	3704	G 4	7251	I 2
	2	2425	J 6	3290	C 3	3706	G 2	7255
2426		H 5	3292	H 4	3707	G 2	7258	G 1
2427		F 7	3293	I 3	3709	G 2	7300	D 2
2428		F 7	3294	I 1	3710	F 3	7350	H 4
2553		A 7	3296	J 4	3711	G 2	7355	G 7
1		2554	A 6	3297	J 4	3712	G 2	7357
	2556	B 6	3301	D 2	3713	G 1	7362	H 3
	2557	A 6	3359	H 3	3714	E 4	7552	C 4
	2558	B 5	3378	H 6	3717	G 3	7553	C 6
	2559	B 4	3379	I 7	3718	D 5	7554	B 4
	1	2560	B 7	3380	I 7	3719	D 3	7555
2561		B 7	3382	J 6	3720	G 4	7600	E 6
2562		A 8	3391	H 7	3721	D 3	7603	F 3
2563		B 7	3395	F 8	3723	D 5	7609	D 7
2582		A 5	3396	G 8	3725	E 8	7805	B 3
2584		A 5	3397	G 8	3726	E 8	7810	C 1
1	2590	C 6	3398	G 7	3727	E 8	7823	B 3
	2591	C 6	3399	E 7	3728	H 3	7826	E 2
	2592	A 5	3400	G 7	3729	H 3	7829	F 2
	2593	C 6	3401	F 7	3730	E 3		
	2600	F 2	3402	F 7	3731	E 2		
	2602	D 3	3403	F 7	3732	F 6		

A4	D1	FRTRESET	G15	ON/OFF-SWITCH	J10	SDA	G15
A5	A1	HOLD	J10	RESET	I11	SDA-EXT	I15
A6	A1	ILL-RHEOSTAT	A14	RESET-LATCH	J12	SECIN	F2
ALIM-SENSE	D7	LAMPE-ON/OFF	E9	RHEOSTAT	G11		
EJECT-SWITCH	J10	MRQ-EXT	J15	SCL	G15		
FILTRE	B6	OFF-STABIC	E4	SCL-EXT	H15		

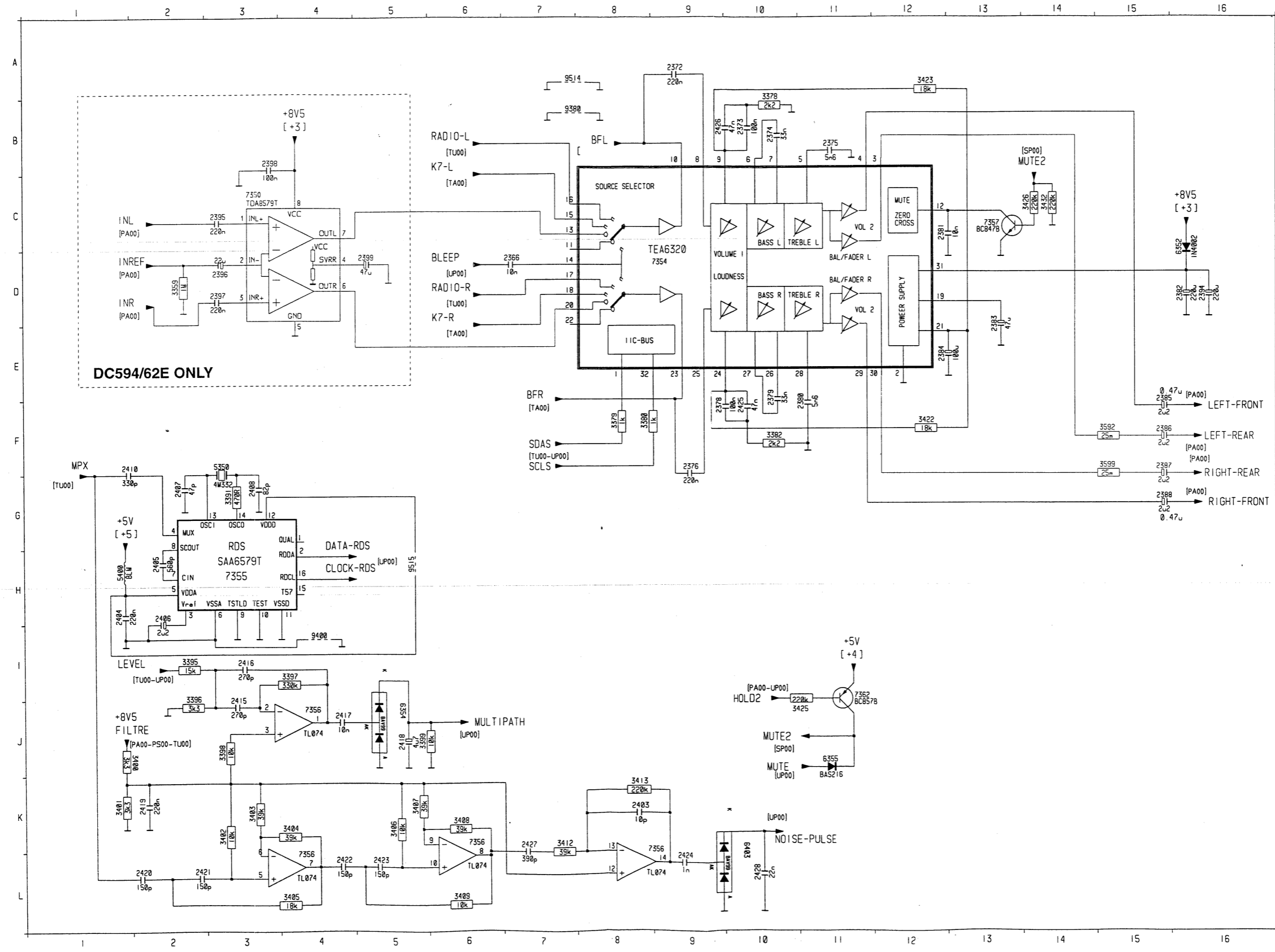
POWER SUPPLY PART 22DC593/62E 22DC594/62E../62S



1801	I16	7809	E14
2016	B2	7810	G13
2800	E3	7823	D9
2801	C2	7826	H8
2802	B2	7829	H11
2803	B6	9801	A9
2804	C6	9802	H5
2806	B3		
2812	D6		
2819	J11		
2822	J5		
2823	K3		
2827	F2		
2828	E7		
2829	E6		
2831	I5		
2832	A13		
2837	H7		
2845	J6		
2846	K7		
3598	A12		
3805	D3		
3806	E4		
3807	D9		
3808	B9		
3809	C9		
3810	E9		
3811	E8		
3813	E5		
3816	F11		
3817	G12		
3818	G12		
3819	F12		
3820	C9		
3821	C9		
3822	D8		
3823	D8		
3826	E7		
3827	K7		
3831	A13		
3833	H10		
3835	I4		
3836	I9		
3837	H10		
3838	A9		
3839	I4		
3843	H16		
3844	J6		
3845	I16		
3847	G16		
3848	G16		
3849	K12		
3852	D10		
3854	J6		
3862	E1		
3863	F1		
3869	A12		
3870	E11		
3871	F16		
5100	B6		
6785	A8		
6804	G14		
6812	J6		
6815	A14		
6816	E4		
6817	J3		
6820	I5		
7800	D5		
7803	B9		
7805	D9		

BFL.....B7	DATA-RDS.....H4	LEFT-REAR.....F15	NOISE-PULSE.....K10	SDAS.....F6
BFR.....E6	HOLD2.....I11	LEVEL.....I2	RADIO-L.....B5	
BLEEP.....D5	INL.....C1	MPX.....F1	RADIO-R.....D5	
CASS-L.....C5	INR.....D1	MULTIPATH.....J6	RIGHT-FRONT.....F15	
CASS-R.....D5	INREF.....D1	MUTE.....J12	RIGHT-REAR.....G15	
CLOCK-RDS.....H4	LEFT-FRONT.....E15	MUTE2.....J12/C13	SCLS.....F6	

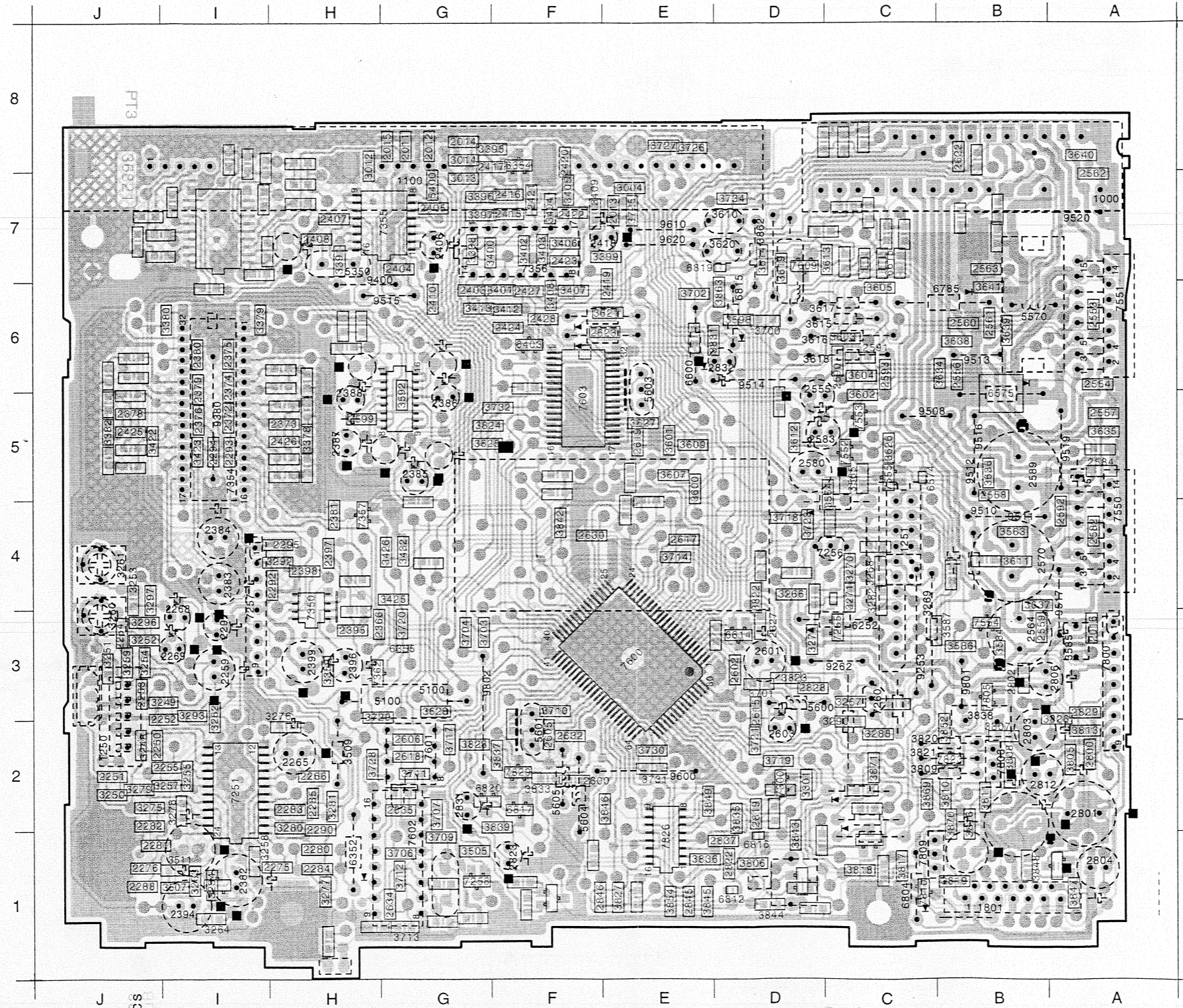
SOUND PROCESSING PART **22DC593/62E** **22DC594/62E../62S**



2366	D 7	5400	H 1
2372	A 9	6352	C 16
2373	B 10	6354	J 5
2374	B 10	6355	J 11
2375	B 11	6403	K 10
A			
2376	F 9	7350	C 3
2378	F 9	7354	D 9
2379	E 10	7355	H 3
2380	F 11	7356	J 4
2381	C 12	7356	L 4
B			
2382	D 16	7356	K 6
2383	D 13	7356	L 8
2384	E 12	7357	C 13
2385	F 15	7362	I 11
2386	F 15	9380	B 7
C			
2387	F 15	9400	I 4
2388	G 15	9514	A 7
2394	D 16	9515	H 5
2395	C 3		
2396	D 3		
D			
2397	D 3		
2398	B 3		
2399	D 5		
2403	K 8		
2404	H 1		
E			
2405	H 2		
2406	H 2		
2407	G 2		
2408	G 3		
2410	F 1		
F			
2415	J 3		
2416	I 3		
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G			
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H			
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I			
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J			
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K			
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M			
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N			
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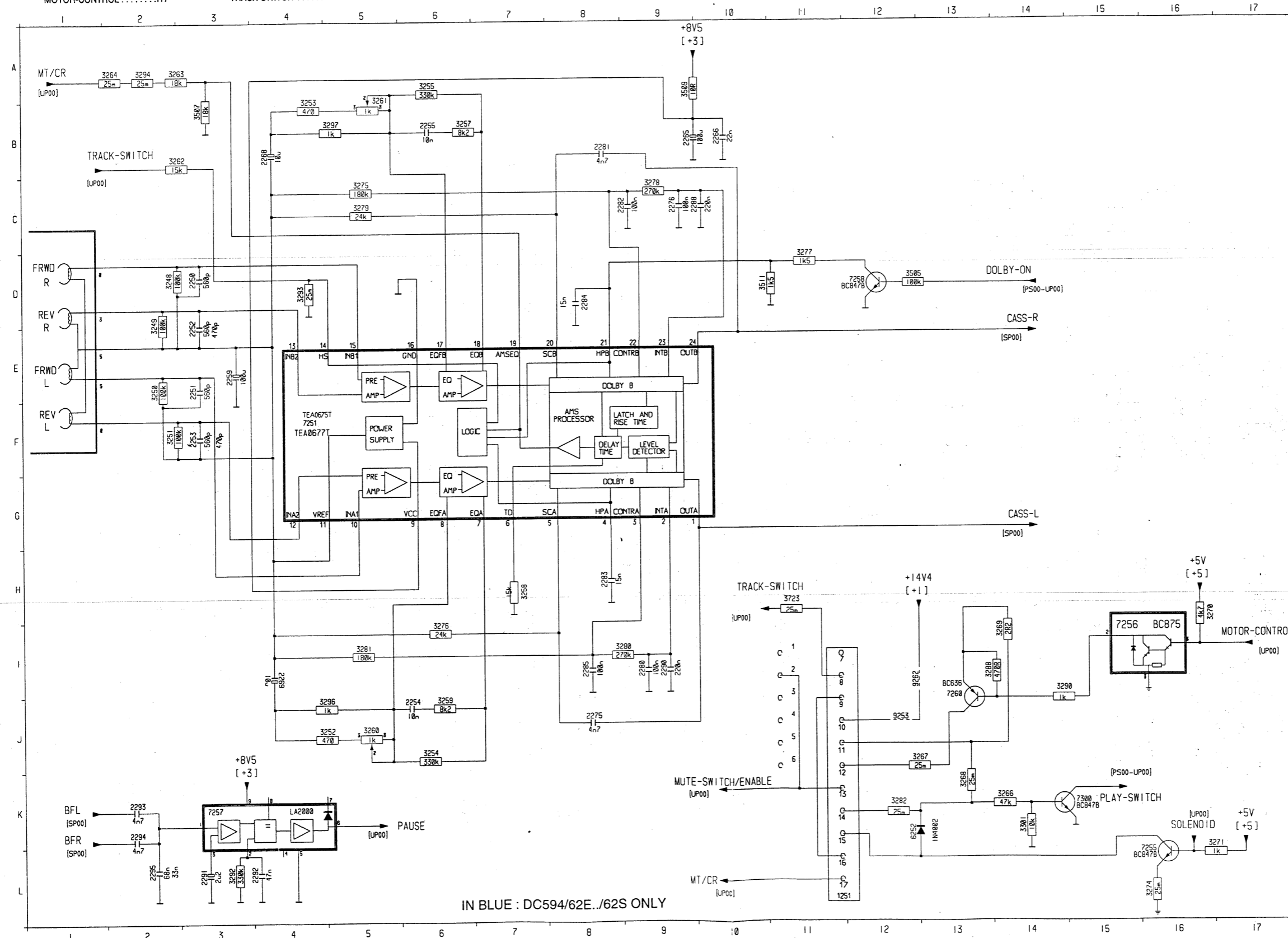
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22DC594/62S



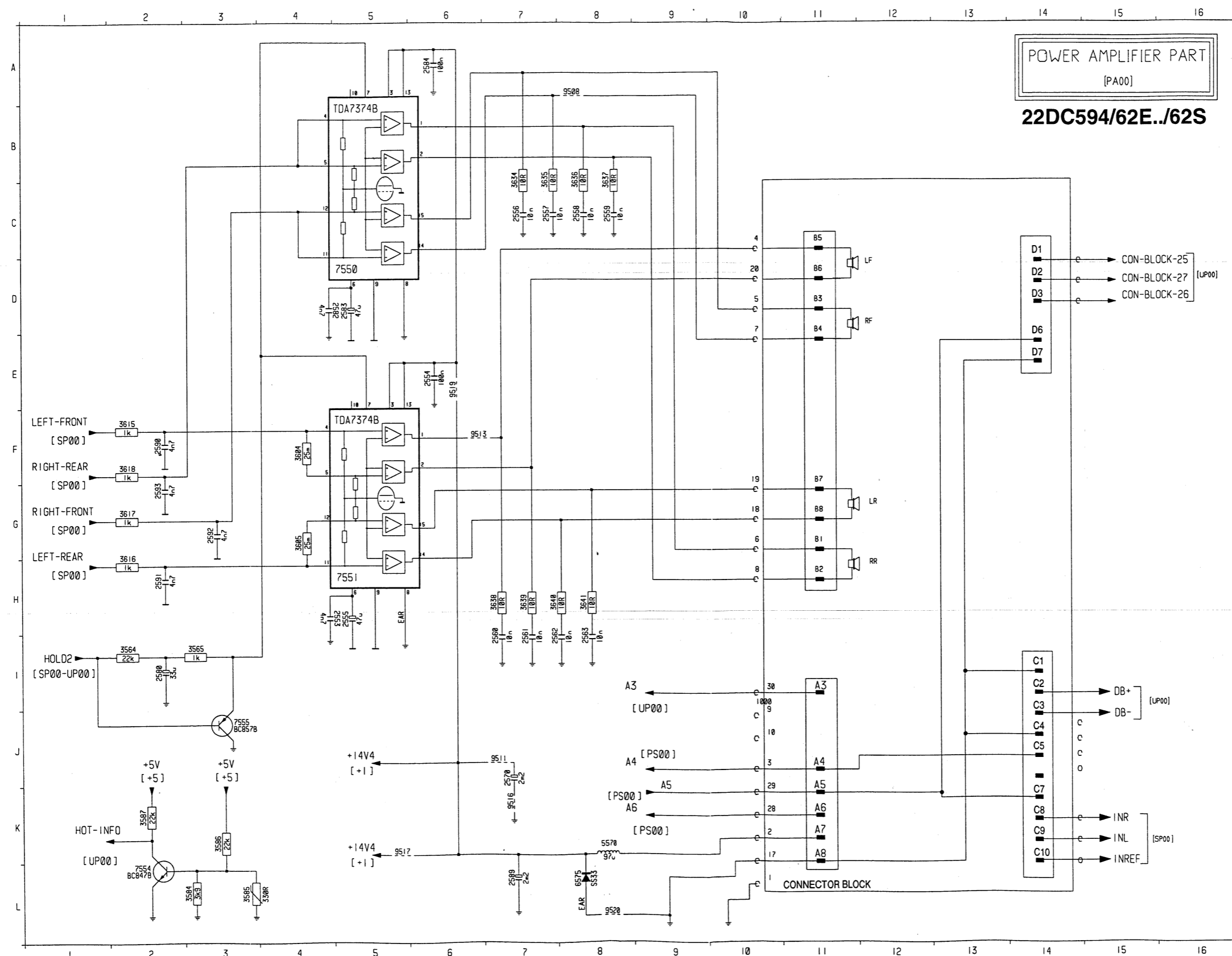
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2280 H 2	2822 D 2	3511 I 2	3825 G 5
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BFLK1
 BFRK1
 CASS-LG17
 CASS-RE17
 DOLBY-OND15
 MOTOR-CONTROLI17
 MT/CRA1/L10
 MUTE-SWITCH/ENABLEK10
 PAUSEK5
 PLAY-SWITCHJ15
 SOLENOIDK15
 TRACK-SWITCHH10

TAPE PART 22DC593/62E 22DC594/62E../62S

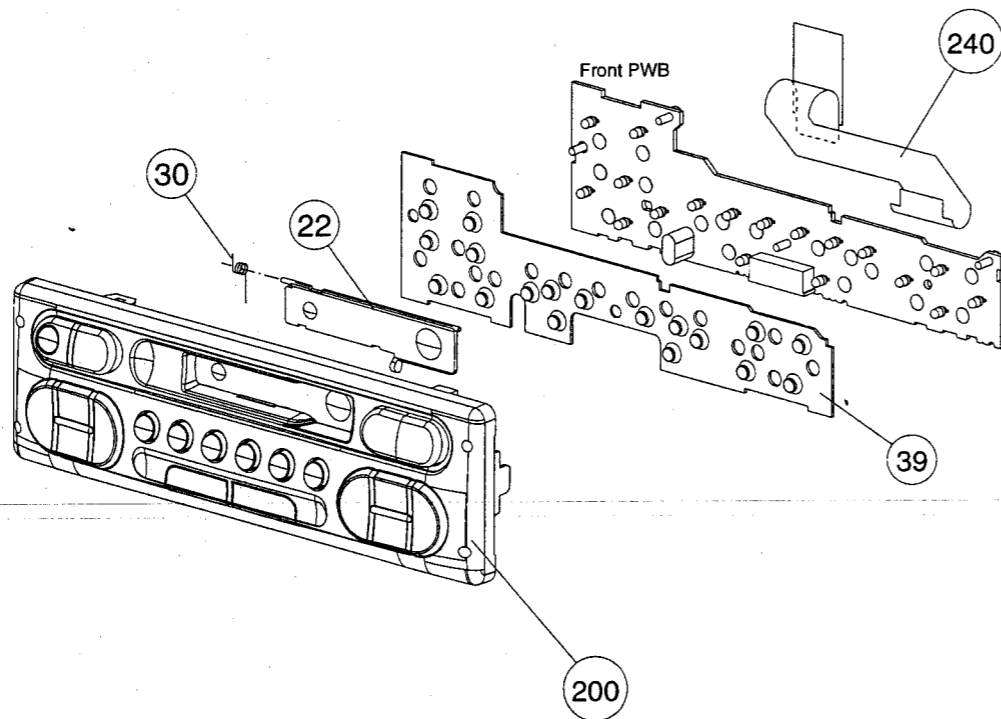


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D 2292	L 4		
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E 3251	F 2		
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G 3266	K14		
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3279	C 5		
I 3280	I 9		
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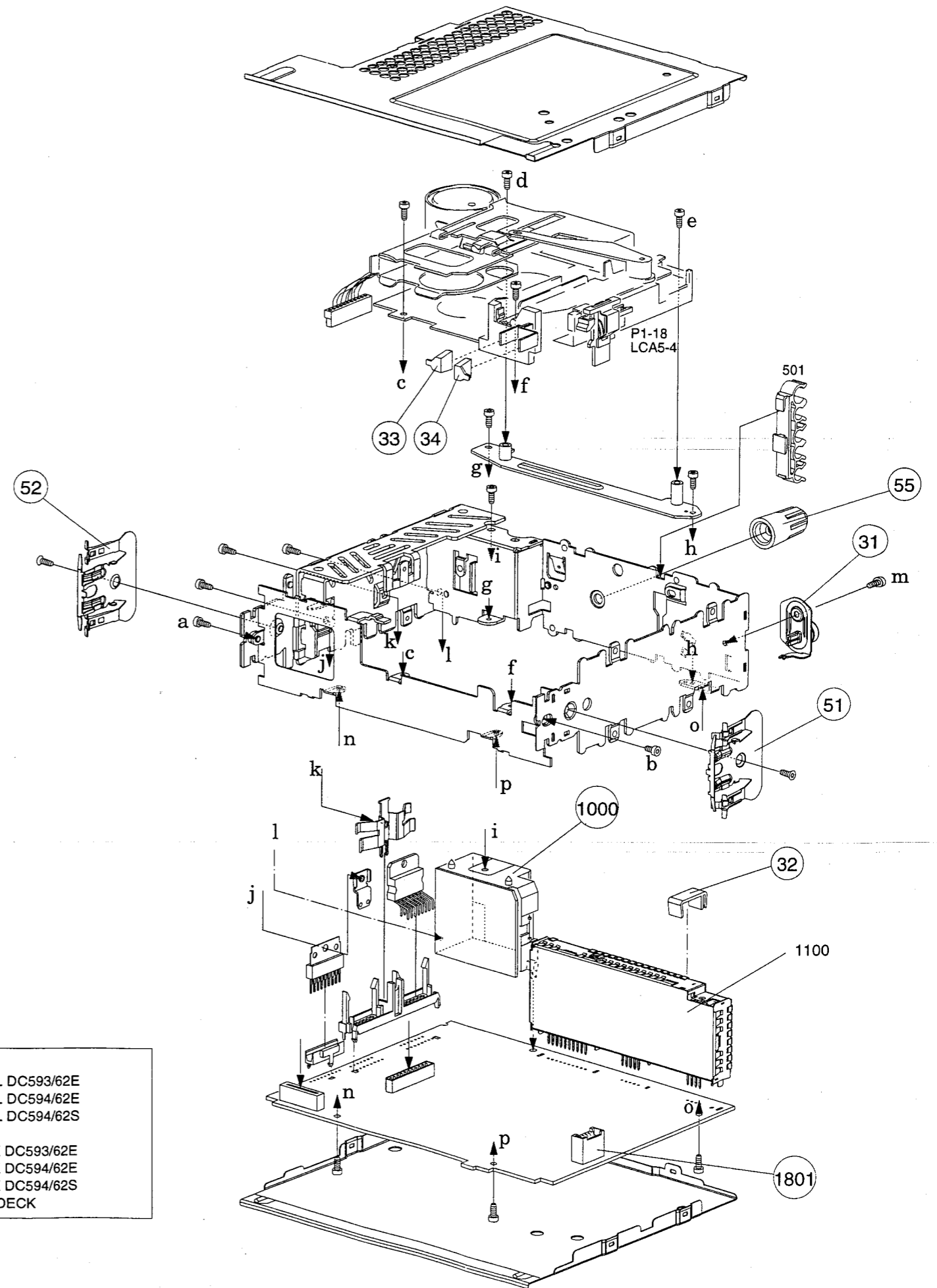


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


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






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22	4822 443 10417	FLAP CASSETTE FOR DC593/62E	200	4822 459 04246	PLATE ORNAMENTAL DC594/62E
30	4822 492 42231	FLAP SPRING	200	4822 459 04247	PLATE ORNAMENTAL DC594/62S
31	4822 26731702	AERIAL BUSH ASSY	240	4822 320 11527	FLEX FOIL
32	4822 404 21276	HOOK IC91	1000	4822 265 10663	CONNECTOR BLOCK DC593/62E
33 - 34	4822 402 10412	BRACKET BUTTONS DECK	1000	4822 265 10613	CONNECTOR BLOCK DC594/62E
39	4822 410 10605	KEYPAD	1000	4822 265 10321	CONNECTOR BLOCK DC594/62S
51 - 52	4822 492 72124	MOUNTING SPRING	1801	4822 265 41348	CONNECTOR HEAD DECK



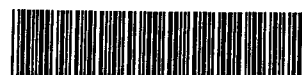
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-II-			2397	4822 126 13849	220nF 10% 16V X7R 0805
			2398	4822 126 13196	100nF 10% X7R 25V
			2399	4822 124 22646	47μF 20% 16V
			2403	5322 122 32448	10pF 5% 50V
2011	5322 122 34098	10nF 10% X7R 63V	2404	4822 126 13849	220nF 10% 16V X7R 0805
2012	5322 122 34098	10nF 10% X7R 63V	2405	5322 116 80853	560pF 5% NP0 63V
2013	5322 126 10223	4,7nF 10% X7R 63V	2406	4822 124 23504	2.2μF 20% 50V
2014	5322 126 10223	4,7nF 10% X7R 63V	2407	5322 122 32452	47pF 5% NP0 63V
2015	5322 122 34123	1nF 10% X7R 50V	2408	4822 122 33515	82pF 5% NP0 63V
2016	5322 122 34123	1nF 10% X7R 50V			
2250	5322 116 80853	560pF 5% 50V NP0 0805	2410	5322 122 31863	330pF 5% NP0 50V
2251	5322 116 80853	560pF 5% 50V NP0 0805	2415	4822 122 33216	270pF 50V NP0 0805
2252*	5322 116 80853	560pF 5% 50V NP0 0805	2416	4822 122 33216	270pF 50V NP0 0805
2252*	5322 122 32268	470pF 5% 50V NP0 0805	2417	5322 122 34098	10nF 10% X7R 63V
			2418	4822 124 80765	4.7μF 20% 35V
2253*	5322 116 80853	560pF 5% 50V NP0 0805			
2253*	5322 122 32268	470pF 5% 50V NP0 0805	2419	4822 126 13849	220nF 10% 16V X7R 0805
2254	5322 122 34098	10nF 10% X7R 63V	2420	5322 122 33538	150pF 2% NP0 63V
2255	5322 122 34098	10nF 10% X7R 63V	2421	5322 122 33538	150pF 2% NP0 63V
2259	4822 124 80453	100μF 20% 10V	2422	5322 122 33538	150pF 2% NP0 63V
			2423	5322 122 33538	150pF 2% NP0 63V
2265	4822 124 80453	100μF 20% 10V			
2266	5322 122 32654	22nF 10% X7R 63V	2424	5322 122 34123	1nF 10% X7R 50V
2268	4822 124 41017	10μF 16V	2425	4822 126 13343	47nF 10% X7R 25V
2269	4822 124 41017	10μF 16V	2426	4822 126 13343	47nF 10% X7R 25V
2275	5322 126 10223	4,7nF 10% X7R 63V	2427	4822 122 32636	390pF 5% SL 50V
			2428	5322 122 32654	22nF 10% X7R 63V
2276	4822 126 13196	100nF 10% X7R 25V			
2280	4822 126 13196	100nF 10% X7R 25V	2553	5322 126 10223	4,7nF 10% X7R 63V
2281	5322 126 10223	4,7nF 10% X7R 63V	2554	4822 122 33496	100nF 10% X7R 63V
2282	4822 126 13196	100nF 10% X7R 25V	2555	5322 124 41938	47μF 6V3
2283	4822 126 13188	15nF 5% X7R 63V	2556	5322 122 34098	10nF 10% X7R 0805
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2284	4822 126 13188	15nF 5% X7R 63V			
2285	4822 126 13196	100nF 10% X7R 25V	2558	5322 122 34098	10nF 10% X7R 0805
2288	4822 126 13849	220nF 10% 16V X7R 0805	2559	5322 122 34098	10nF 10% X7R 0805
2290	4822 126 13849	220nF 10% 16V X7R 0805	2560	5322 122 34098	10nF 10% X7R 0805
2291	4822 124 23504	2.2μF 20% 50V	2561	5322 122 34098	10nF 10% X7R 0805
			2562	5322 122 34098	10nF 10% X7R 0805
2292	4822 126 13343	47nF 10% X7R 25V			
2293	5322 126 10223	4,7nF 10% X7R 63V	2563	5322 122 34098	10nF 10% X7R 0805
2294	5322 126 10223	4,7nF 10% X7R 63V	2564	4822 124 80766	1000uF 20% 25V
2295*	4822 122 33342	33nF 10% X7R 50V 0805	2570*	4822 124 80766	1000uF 20% 25V
2295*	4822 126 13392	68nF 10% X7R 0805	2570*	4822 124 80769	2200μF 20% 16V
			2580*	4822 124 80453	100μF 20% 10V
2366	5322 122 34098	10nF 10% X7R 63V			
2372	4822 126 13849	220nF 10% 16V X7R 0805	2580*	4822 124 23281	33μF 20% 16V
2373	4822 126 13196	100nF 10% X7R 25V	2582	5322 126 10223	4nF7 10% 50V X7R 0805
2374	4822 122 33342	33nF 10% X7R 63V	2583	5322 124 41938	47μF 20% 6V3
2375	4822 122 32646	5,6nF 10% X7R 50V	2584	4822 122 33496	100nF 10% 50V X7R 1206
			2589	4822 124 80769	2200μF 20% 16V
2376	4822 126 13849	220nF 10% 16V X7R 0805			
2378	4822 126 13196	100nF 10% X7R 25V	2590	5322 126 10223	4,7nF 10% X7R 63V
2379	4822 122 33342	33nF 10% X7R 63V	2591*	5322 122 32654	22nF 10% X7R 63V
2380	4822 122 32646	5,6nF 10% X7R 50V	2591*	5322 126 10223	4,7nF 10% X7R 63V
2381	5322 122 34098	10nF 10% X7R 63V	2592	5322 126 10223	4,7nF 10% X7R 63V
			2593*	5322 122 32654	22nF 10% X7R 63V
2382	4822 124 23582	220μF 10V			
2383	4822 124 22646	47μF 20% 16V	2593*	5322 126 10223	4,7nF 10% X7R 63V
2384	4822 124 80453	100μF 20% 10V	2600	5322 122 32654	22nF 10% X7R 63V
2385*	4822 124 40999	470nF 20% 50V	2601	4822 124 22646	47μF 20% 16V
2385*	4822 124 23504	2,2μF 20% 50V	2602	4822 126 13196	100nF 10% X7R 25V
			2603	4822 124 41017	10μF 16V
2386	4822 124 23504	2,2μF 20% 50V			
2387	4822 124 23504	2,2μF 20% 50V	2605	5322 122 32658	22pF 5% 50V
2388*	4822 124 40999	470nF 20% 50V	2606	4822 126 13196	100nF 10% X7R 25V
2388*	4822 124 23504	2,2μF 20% 50V	2615	4822 122 33342	33nF 10% X7R 63V
2394	4822 124 23582	220μF 10V	2617	4822 122 33342	33nF 10% X7R 63V
			2618	5322 122 32654	22nF 10% X7R 63V
2395	4822 126 13849	220nF 10% 16V X7R 0805			

					
2619	4822 126 13196	100nF 10% X7R 25V	3281	4822 051 20184	180KΩ 5% 0,1W
2622	5322 122 34123	1nF 10% X7R 50V	3282	4822 051 20008	CHIP JUMPER MAX 0R05
2623	4822 126 13196	100nF 10% X7R 25V	3288	4822 051 20471	470Ω 5% 0,1W
2630	5322 122 34123	1nF 10% X7R 50V	3290	4822 051 20102	1KΩ 5% 0,1W
2632	5322 122 32268	470pF 10% 50V	3292	4822 051 20334	330KΩ 5% 0,1W
2634	5322 122 32531	100pF 5% NP0 50V	3293	4822 051 20008	CHIP JUMPER MAX 0R05
2635	5322 126 10223	4,7nF 10% X7R 63V	3294	4822 051 20008	CHIP JUMPER MAX 0R05
2800	4822 126 13343	47nF 10% X7R 25V	3296	4822 051 20102	1KΩ 5% 0,1W
2801	4822 124 80766	1000μF 20% 25V	3297	4822 051 20102	1KΩ 5% 0,1W
2802	4822 126 13849	220nF 10% 16V X7R 0805	3301	4822 117 10833	10KΩ 5% 0805 RC11
2803	4822 124 22646	47μF 20% 16V	3359	4822 051 20105	1MΩ 5% RC11 0805
2804	4822 124 22646	47μF 20% 16V	3378	4822 117 11449	2K2 1% 0,1W
2806	4822 124 11562	47μF 20% 35V	3379	4822 051 20102	1KΩ 5% 0,1W
2812	4822 124 22646	47μF 20% 16V	3380	4822 051 20102	1KΩ 5% 0,1W
2819	5322 122 32654	22nF 10% X7R 63V	3382	4822 117 11449	2K2 1% 0,1W
2822	5322 122 34098	10nF 10% X7R 63V	3391	4822 051 20471	470Ω 5% 0,1W
2823	4822 124 23282	1μF 20% 50V	3395	4822 051 20153	15KΩ 5% RC11 0805
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2829	5322 122 32654	22nF 10% X7R 63V	3398	4822 117 10833	10KΩ 1% 0,1W
2831	4822 124 80765	4,7μF 20% 35V	3399	4822 117 10833	10KΩ 1% 0,1W
2832	4822 124 41017	10μF 16V	3400	4822 051 20332	3K30 5% 0,1W
2837	4822 122 33342	33nF 10% X7R 63V	3401	4822 051 20332	3K30 5% 0,1W
2845	5322 122 34098	10nF 10% X7R 63V	3402	4822 117 10833	10KΩ 1% 0,1W
2846	5322 122 34098	10nF 10% X7R 63V	3403	4822 051 20393	39KΩ 5% 0,1W
			3404	4822 051 20393	39KΩ 5% 0,1W
3004	4822 051 20223	22KΩ 5% RC11 0805	3405	4822 051 20183	18KΩ 5% 0,1W
3012	4822 051 20102	1KΩ 5% 0,1W	3406	4822 117 10833	10KΩ 1% 0,1W
3013	4822 051 20273	27KΩ 5% RC11 0805	3407	4822 051 20393	39KΩ 5% 0,1W
3014	4822 051 20104	100KΩ 5% 0,1W	3408	4822 051 20393	39KΩ 5% 0,1W
3248	4822 051 20104	100KΩ 5% 0,1W			
3249	4822 051 20104	100KΩ 5% 0,1W	3409	4822 117 10833	10KΩ 1% 0,1W
3250	4822 051 20104	100KΩ 5% 0,1W	3412	4822 051 20393	39KΩ 5% 0,1W
3251	4822 051 20104	100KΩ 5% 0,1W	3413	4822 051 20224	220KΩ 5% 0,1W
3252	4822 051 20471	470Ω 5% 0,1W	3422	4822 051 20183	18KΩ 5% RC11 0805
3253	4822 051 20471	470Ω 5% 0,1W	3423	4822 051 20183	18KΩ 5% RC11 0805
3254	4822 051 20334	330KΩ 5% 0,1W	3425	4822 051 20224	220KΩ 5% 0,1W
3255	4822 051 20334	330KΩ 5% 0,1W	3426	4822 051 20224	220KΩ 5% 0,1W
3257	4822 051 20822	8K20 5% 0,1W	3432	4822 051 20224	220KΩ 5% 0,1W
3258	4822 051 20153	15KΩ 5% 0,1W	3505	4822 051 20104	100KΩ 5% 0,1W
3259	4822 051 20822	8K20 5% 0,1W	3507	4822 051 20183	18KΩ 5% 0,1W
3260	4822 100 11681	CAR LIN 1K	3509	4822 116 52176	10Ω 5% 0,5W
3261	4822 100 11681	CAR LIN 1K	3511	4822 051 20102	1KΩ 5% RC11 0805
3262	4822 051 20153	15K 5% 0805	3563	4822 051 20222	2K2 5% 0,1W
3263	4822 051 20183	18KΩ 5% 0,1W	3564	4822 051 20223	22KΩ 5% 0,1W
3264	4822 051 20008	CHIP JUMPER MAX 0R05	3565*	4822 051 20008	0Ω JUMP. (0805)
3266	4822 051 20473	47KΩ 5% 0805 RC11	3565*	4822 051 20102	1KΩ 5% RC11 0805
3267	4822 051 20008	CHIP JUMPER MAX 0R05	3584	4822 051 20392	3K9 5% 0,1W
3268	4822 051 20008	CHIP JUMPER MAX 0R05	3585	4822 116 40254	330Ω
3269	4822 117 10179	2,2Ω 5% SFR16	3586	4822 051 20223	22KΩ 5% 0,1W
3270	4822 051 20472	4K70 5% 0,1W	3587	4822 051 20223	22KΩ 5% 0,1W
3271	4822 051 20102	1KΩ 5% 0,1W	3592	4822 051 20008	0Ω JUMP. (0805)
3274	4822 051 20008	CHIP JUMPER MAX 0R05	3598	4822 051 20472	4K70 5% 0,1W
3275	4822 051 20184	180KΩ 5% 0,1W	3599	4822 051 20008	0Ω JUMP. (0805)
3276	4822 117 10507	24K 1% 0,1W	3600	4822 051 20008	0Ω JUMP. (0805)
3277	4822 117 11139	1K5 1% 0,1W	3601	4822 051 20008	0Ω JUMP. (0805)
3278	4822 051 20274	270KΩ 5% 0,1W	3602	4822 051 20008	0Ω JUMP. (0805)
3279	4822 117 10507	24KΩ 1% 0,1W	3603	4822 051 20008	0Ω JUMP. (0805)
3280	4822 051 20274	270KΩ 5% 0,1W	3604	4822 051 20008	0Ω JUMP. (0805)
			3605	4822 051 20008	0Ω JUMP. (0805)
			3607	4822 051 20008	0Ω JUMP. (0805)

					
3609	4822 051 20008	0Ω JUMP. (0805)	3816	4822 051 20472	4K70 5% 0,1W
3610	4822 116 40221	R PTC 8Ω2	3817	4822 117 10833	10KΩ 1% 0,1W
3611	4822 051 20222	2K2 5% 0,1W	3818	4822 117 10833	10KΩ 1% 0,1W
3612	4822 051 20471	470Ω 5% 0,1W	3819	4822 051 20102	1KΩ 5% 0,1W
3613	4822 051 20333	33KΩ 5% 0,1W	3820	4822 116 83863	1KΩ 5% 0,5W
3614	4822 051 20104	100KΩ 5% 0,1W	3821	4822 116 83863	1KΩ 5% 0,5W
3615	4822 116 83863	1KΩ 5% 0,5W	3822	4822 051 20224	220KΩ 5% 0,1W
3616	4822 116 83863	1KΩ 5% 0,5W	3823	4822 051 20104	100KΩ 5% 0,1W
3617	4822 116 83863	1KΩ 5% 0,5W	3824	4822 117 10833	10KΩ 1% 0,1W
3618	4822 116 83863	1KΩ 5% 0,5W	3825	4822 117 10833	10KΩ 1% 0,1W
3619	4822 117 11449	2K2 1% 0,1W	3826	4822 051 20223	22KΩ 5% 0,1W
3620	4822 116 40221	R PTC 8Ω2	3827	4822 051 20333	33KΩ 5% 0,1W
3621	4822 051 20101	100Ω 5% 0,1W	3828	4822 117 10833	10KΩ 1% 0,1W
3626	4822 051 20224	220KΩ 5% 0,1W	3831	4822 117 11449	2K2 1% 0,1W
3627	4822 051 20102	1KΩ 5% 0,1W	3833	4822 117 10833	10KΩ 1% 0,1W
3628	4822 051 20008	0Ω JUMP. (0805)	3835	4822 051 20104	100KΩ 5% 0,1W
3634	4822 051 20109	10Ω 5% 0805 B/T	3836	4822 051 20474	470KΩ 5% 0,1W
3635	4822 051 20109	10Ω 5% 0805 B/T	3837	4822 117 10833	10KΩ 1% 0,1W
3636	4822 051 20109	10Ω 5% 0805 B/T	3838	4822 116 40267	3R3 25% 20V
3637	4822 051 20109	10Ω 5% 0805 B/T	3839	4822 051 20104	100KΩ 5% 0,1W
3638	4822 051 20109	10Ω 5% 0805 B/T	3842	4822 117 10833	10KΩ 1% 0,1W
3639	4822 051 20109	10Ω 5% 0805 B/T	3843	4822 051 20008	0R05 JUMPER 0805
3640	4822 051 20109	10Ω 5% 0805 B/T	3844	4822 051 20223	22KΩ 5% 0805 RC11
3641	4822 051 20109	10Ω 5% 0805 B/T	3845	4822 051 20008	CHIP JUMPER MAX 0R05
3700	4822 117 10833	10KΩ 1% 0,1W	3846	4822 051 20102	1KΩ 5% 0,1W
3701	4822 051 20101	100Ω 5% 0,1W	3847	4822 051 20471	470Ω 5% 0,1W
3702	4822 051 20331	330Ω 5% RC11 0805^M	3848	4822 051 20471	470Ω 5% 0,1W
3703	4822 117 10833	10KΩ 1% 0,1W	3849	4822 117 10833	10K 1% 0,1W
3704	4822 117 10833	10KΩ 1% 0,1W	3852	4822 051 20102	1KΩ 5% 0,1W
3706	4822 051 20008	0Ω JUMP. (0805)	3854	4822 051 20473	47KΩ 5% 0,1W
3707	4822 051 20008	0Ω JUMP. (0805)	3860	4822 051 20104	100KΩ 5% 0,1W
3709	4822 051 20153	15KΩ 5% 0,1W	3862	4822 116 83864	10K 5% CFB R-20
3710	4822 051 20471	470Ω 5% 0,1W	3863	4822 051 20104	100KΩ 5% 0,1W
3711	4822 051 20153	15KΩ 5% 0,1W	3869	4822 051 20008	0Ω JUMP. (0805)
3712	4822 051 20008	0Ω JUMP. (0805)	3870	4822 051 20008	0Ω JUMP. (0805)
3713	4822 051 20473	47KΩ 5% 0,1W	3871	4822 051 20223	22K 5% RC11 0805
3714	4822 051 20473	47KΩ 5% 0,1W			
3717	4822 117 10833	10KΩ 1% 0,1W			
3718	4822 051 20472	4K70 5% 0,1W			
3719	4822 051 20153	15KΩ 5% 0805 RC11			
3720	4822 051 20102	1KΩ 5% 0,1W			
3721	4822 051 20153	15KΩ 5% 0,1W	5100	4822 157 71433	120μH 10% LAL05TB121K
3723	4822 051 20008	0R05 JUMPER 0805	5350	4822 242 80259	LN-G38-31 (4, 332MHZ)
3725	4822 051 20104	100KΩ 5% 0,1W	5400	4822 157 71206	BLM21A10PT
3726	4822 051 20101	100Ω 5% 0,1W	5570*	4822 157 70935	97μH 10A
3727	4822 051 20101	100Ω 5% 0,1W	5570*	4822 157 70839	160μH 5A
3728	4822 117 10833	10KΩ 1% 0,1W	5600	4822 157 52983	22μH 10%
3729	4822 117 10833	10KΩ 1% 0,1W	5601	4822 242 81959	CST11.5M7W
3730	4822 051 20153	15KΩ 5% 0,1W	5603	4822 242 81002	CST6.00M3W
3731	4822 051 20473	47KΩ 5% 0,1W	5604	4822 157 60122	LAL02 4,7μH 5%
3732	4822 051 20102	1KΩ 5% 0,1W	5605	4822 157 60122	LAL02 4,7μH 5%
3734	4822 051 20153	15KΩ 5% RC11 0805	5606	4822 157 71206	IND SM 10MH z 600R
3805	4822 051 20473	47KΩ 5% 0,1W			
3806	4822 051 20102	1KΩ 5% 0,1W			
3807	4822 117 10833	10KΩ 1% 0,1W			
3808	4822 117 10833	10KΩ 1% 0,1W			
3809	4822 116 83863	1KΩ 5% 0,5W			
3810	4822 117 10833	10KΩ 1% 0,1W	6252	5322 130 30684	DIODE 1N4002 GPE
3811	4822 051 20473	47KΩ 5% 0,1W	6352	5322 130 30684	DIODE 1N4002 GPE
3813	4822 051 20473	47KΩ 5% 0,1W	6354	5322 130 34337	BAV99
			6355	4822 130 83757	DIODE BA216
			6403	5322 130 34337	BAV99
			6574	4822 130 83757	DIODE BA216
			6575	4822 130 10488	SM DIO S33
			6600	4822 130 34173	ZENER BZ55-F5V6
			6614	5322 130 34331	BAV70

 			
6615	4822 130 83757	DIODE BAS216	
6785	5322 130 30684	1N4002GPE	
6804	4822 130 34195	BZX79-C13	
6610	4822 130 32904	BZV85-C5V6	
6611	4822 130 32904	BZV85-C5V6	
6812	4822 130 83757	DIODE BAS216	
6815	4822 130 34173	BZX55-F5V6	
6816	4822 130 83757	DIODE BAS216	
6817	5322 130 34337	BAV99	
6818	5322 130 34331	BAV70	
6819	4822 130 83757	DIODE BAS216	
6820	5322 130 34337	BAV99	
 			
7251*	4822 209 33237	TEA9677T/V1	
7251*	4822 209 32744	TEA0675T/V1	
7255	4822 130 60511	BC847B	
7256	5322 130 61677	BC875	
7257	4822 209 83159	LA2000	
7258	4822 130 60511	BC847B	
7260	4822 130 44283	BC636	
7300	4822 130 60511	SM TRANS BC847B	
7350	4822 209 33985	TDA8579T/N1	
7354	4822 209 32745	TEA6320/V1	
7355	4822 209 31981	SAA6579T/V1	
7356	4822 209 32742	TL074IN	
7357	4822 130 60511	BC847B	
7362	5322 130 60508	BC857B	
7550	4822 209 90404	TDA7374B POWER IC	
7551	4822 209 31132	TDA7374V TILL FD01	
7551	4822 209 90404	TDA7374B FROM FD02	
7552	4822 130 60511	BC847B	
7553	4822 130 60511	BC847B	
7554	4822 130 60511	BC847B	
7555	5322 130 60508	BC857B	
7600	4822 209 13705	P83CE558EFB/ 82	
7602	5322 209 10468	HEF4521BP	
7603	4822 209 32743	MSM6307GS-VK	
7609	4822 130 60511	BC847B	
7800	4822 209 33029	TDA3602/N3	
7803	4822 130 40995	BD438(141Y)	
7805	4822 130 60511	BC847B	
7809	4822 130 41484	BD677(142Y)	
7810	4822 130 60511	BC847B	
7823	4822 130 60511	BC847B	
7826	4822 209 12628	HEF4044BT	
7829	5322 130 60508	BC857B	
Items with *: Alternative components. See schematic diagrams			

Service
Service
Service



PHIL-04728

ERSATZTEILE
für Philips Car Systems
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KiVi Service GmbH
Windmühlenstr. 41 · 31178 Giesen/Emmerke
Tel.: 0 51 21 / 6 00 20 · Fax 0 51 21 / 6 0 2 5 4

Service Manual

12 V 

TECHNICAL DATA

Operating voltage	: 9 - 16V (nom. 13.2V)
Tape speed	: 4.76cm/sec \pm 0.5%
Wow & flutter	: \leq 0.35% RMS (+10 - +45°C)
Crosstalk (track 2-3)	: $<$ -40dB
Fast wind time	: \leq 115secs (C-60)
Number of tracks	: 2x2
Channel separation (Tracks 1-2/3-4)	: $>$ 35dB



PHILIPS

4728

GENERAL

The LCA2.4 has the following features:

- Dolby
- "Key-Off" standby
- Automatic Music sensor System
- Metal / Ferro tape selector switch

MAINTENANCE

The cassette mechanism requires periodic cleaning, as well as periodic lubrication of the principal points.

1. Cleaning with alcohol or spirit

- Playback head (pos.332).
- Pressure rollers & capstans (pos.17, 57 and 58).
- Belt (pos.207) & pulley (pos.39).

To clean head, pressure roller and capstan, it is also possible to use drop-in cassette SBC114 (4822 389 20035).

2. Lubrication

Refer to the 'Lubrication Overview' on page 5.

ADJUSTMENTS AND CHECKS

Equipment required:

- Universal test cassette SBC419 (4822 397 30069)
- Universal test cassette SBC420 (4822 397 30071)
- Friction test cassette 811/CTM (4822 395 30054)
- Spring scale 50-500g (4822 395 80028)
- Puller for clutch (4822 395 60039)
- Wow & flutter meter
- AC millivoltmeters
- Spring scale 50-500 g

1. Pressure roller pressure

The pressure on the capstans should be 210 - 370 grammes (2.1 - 3.7N).

This pressure is measured as follows (NOR and REV):

- Select Play mode.
- Push the pressure roller back at the shown point by means of the spring scale.
- At the point where pressure roller and capstan just disengage the spring scale should be read.
- If the pressure is incorrect, replace spring 19.

2. Friction clutch (Reel assy)

- Insert friction test cassette 811/CTM (NOR and REV).
- Play take-up torque should be 35 - 75g/cm.
- Fast wind torque should be 40 - 150g/cm.
- If the torque is not correct, replace reel assy.

3. Wow & flutter/tape speed (Fig. G)

This check is carried out on a complete car radio; proceed as follows:

- Connect the wow & flutter meter to the LS outputs.
- Insert test cassette SBC419 (or SBC420) and play the 3150Hz signal.
- The wow & flutter value should be $\leq 0.35\%$.
- Tape speed should be 4.76cm/sec. $\pm 0.5\%$.
- The tape speed can be adjusted with screw "S".

In case of an excessive wow & flutter value, check following parts for correct functioning:

- motor 320
- pressure (pinch) rollers 17
- belt 207
- friction clutches (reel assy's)
- flywheels 57 and 58
- pulley 39

4. Azimuth (Figs. G, H)

This check is carried out on a complete car radio; proceed as follows:

- Apply a 4 Ω load to both loudspeaker outputs.
- Connect an AC millivoltmeter across both loudspeaker outputs.
- Play the 10kHz signal of test cassette SBC419 or SBC420.
- Adjust screw 'A' for the average of the max. output voltages.
- The maximum allowed difference between both channels is 4 dB.
- Switch over to 'reverse play'.
- If the value measured differs from the previously measured value, bearing 49 in the front flywheel ("reverse") should be displaced.

5. Flywheels 57, 58

Refer to Fig. J.

DISASSEMBLY INSTRUCTIONS

Notes:

In a few places parts are locked by synthetic bosses.
To be able to dismantle these parts, the bosses have to be bent, displaced etc.

Gearwheels 33 and 34 and pressure rollers 17 are attached to the spindles by means of a snap connection. These parts can be disassembled carefully with a screwdriver.

If gearwheel 33 (or 34) has to be replaced, the corresponding bracket 12 (or 13) should ALSO be replaced.

Belt 207, Fly wheels 57 & 58, Cog wheel assy 12 & 33
See figure A.

Pressure roller 17, Head assy 332
See figure B.

Head bracket 298
See figure C.

Clutch 6
See figure D.

Cog wheels 30, 31, 34
See figure E.

Reel base assy
See figure F.

BELT 207, FLY WHEELS 57 & 58, COG WHEEL ASSY 12,33

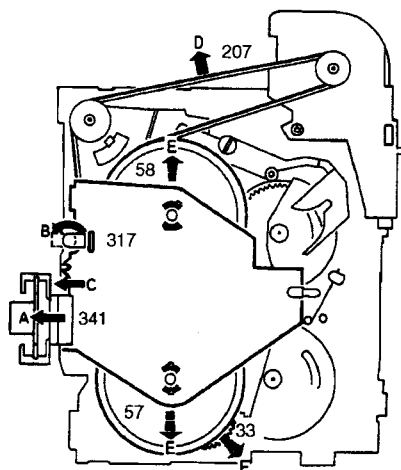


Fig. A

PRESSURE ROLLER 17, HEAD 332

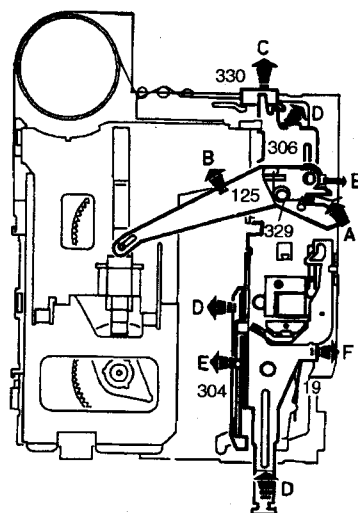


Fig. B

HEAD BRACKET 298

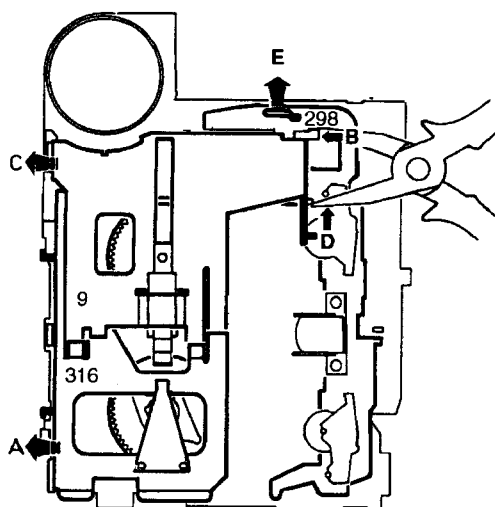


Fig. C

CLUTCH 6

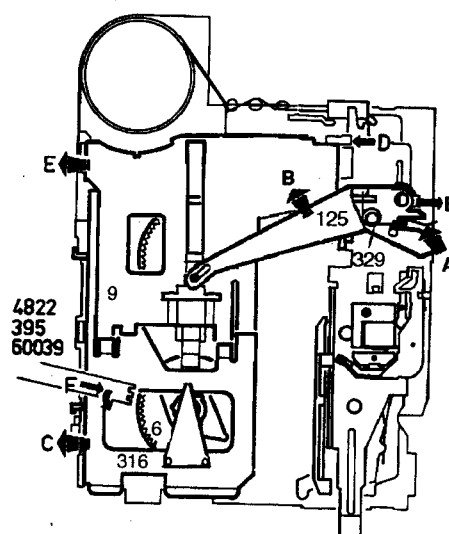


Fig. D

COG WHEELS 30, 31, 34

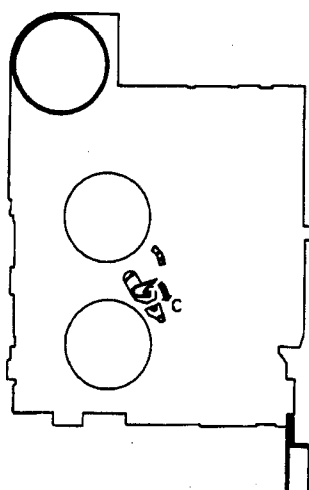


Fig. E

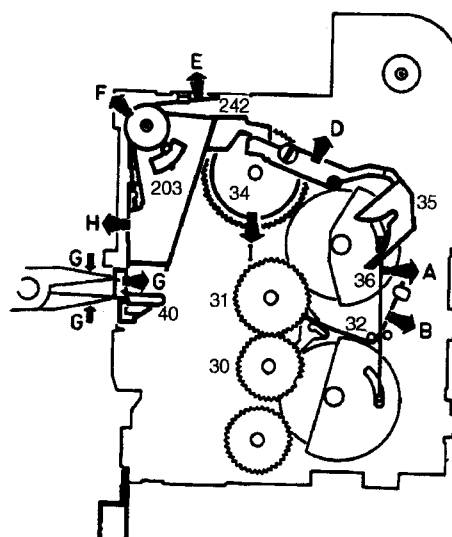


Fig. F

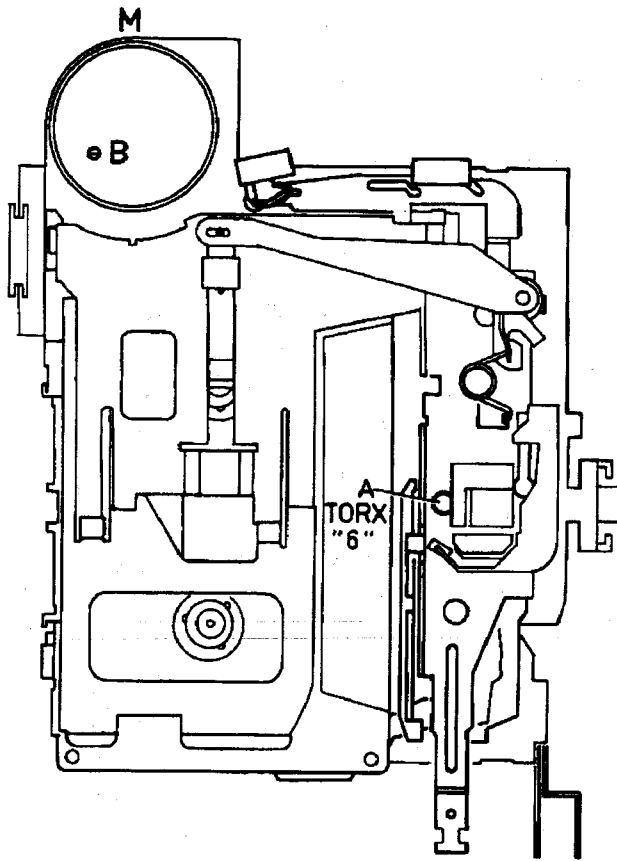


Fig. G

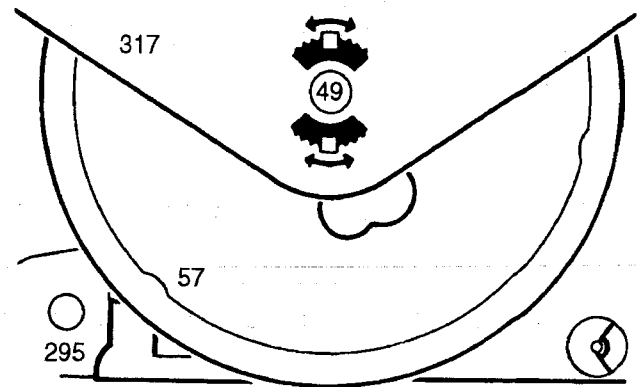


Fig. H

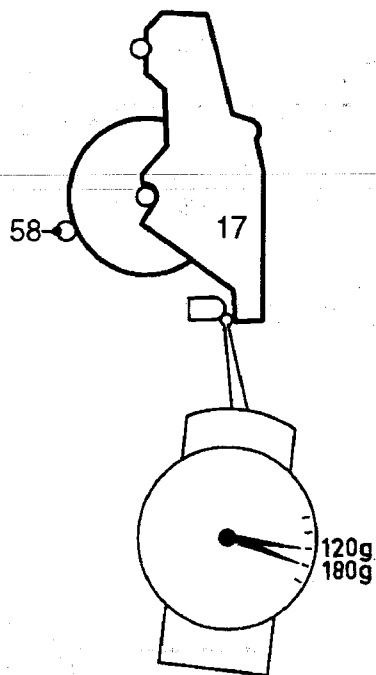


Fig. I

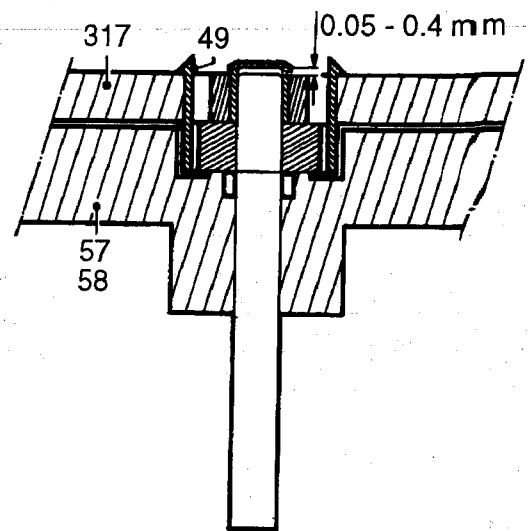


Fig. J

CONNECTIONS

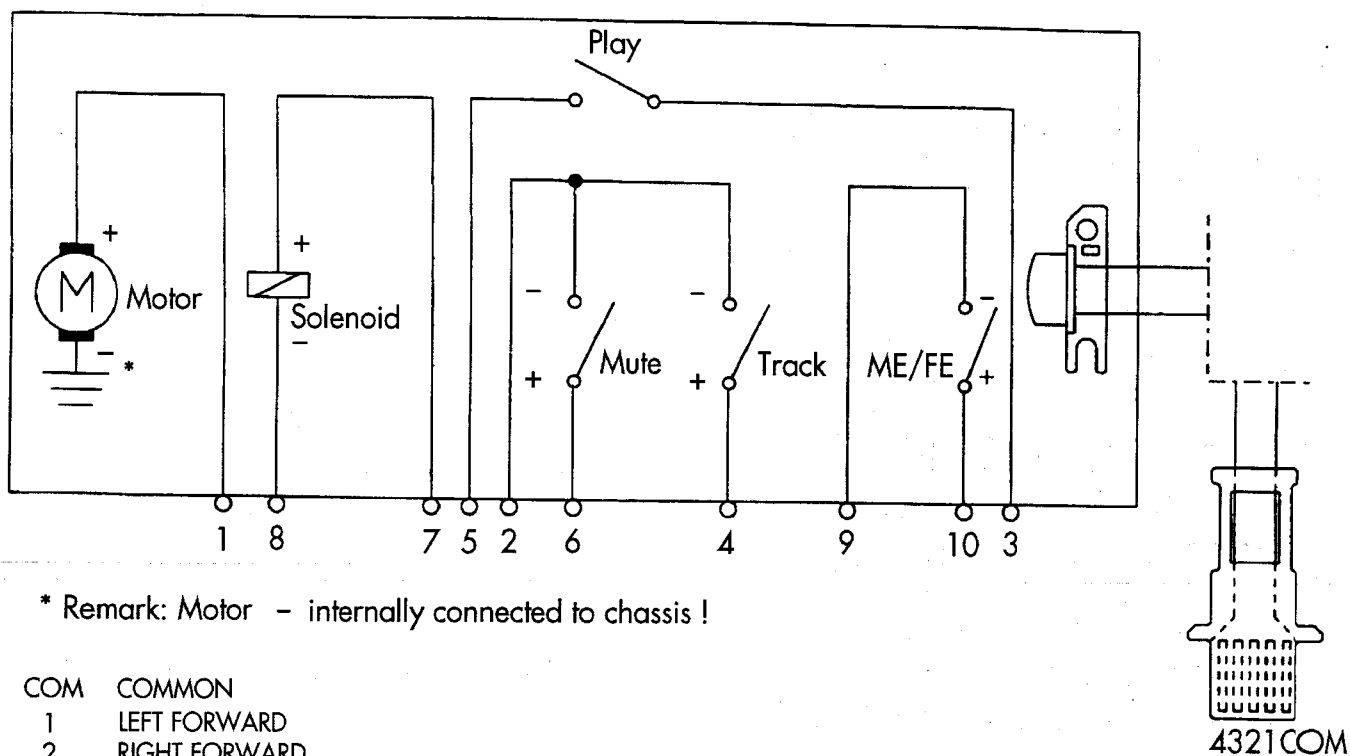


Fig. K

Fig. N

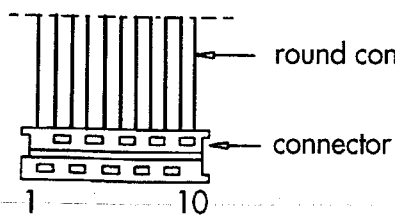


Fig. L

wire	colour	function
1	red	Motor+
2	brown	COMMON
3	orange	+14V
4	yellow	Track SW
5	green	Play SW
6	blue	Mute SW
7	violet	+ Solenoid
8	grey	- Solenoid
9	white	- ME/FE
10	black	+ ME/FE

Fig. O

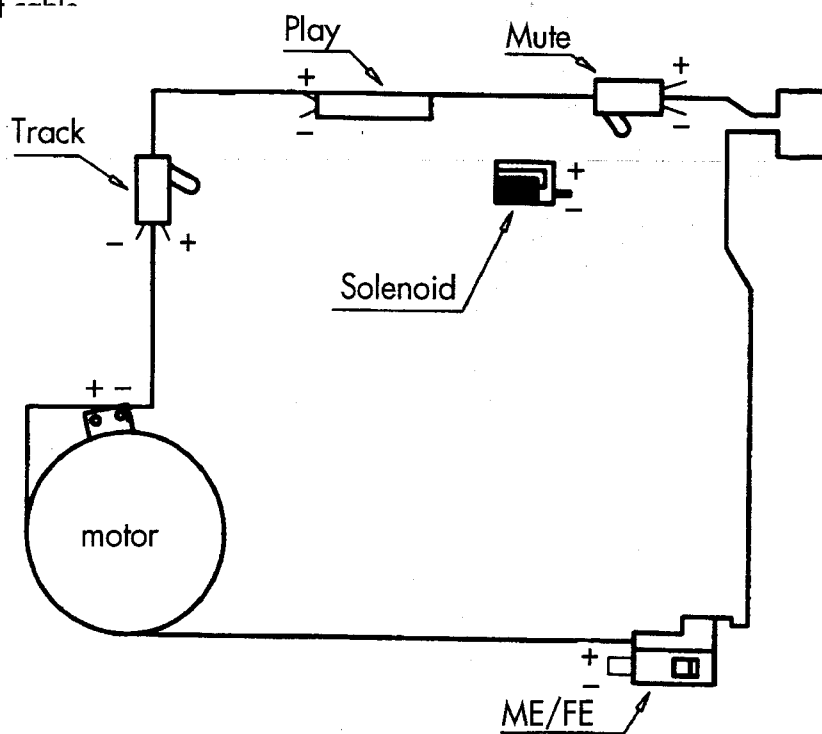
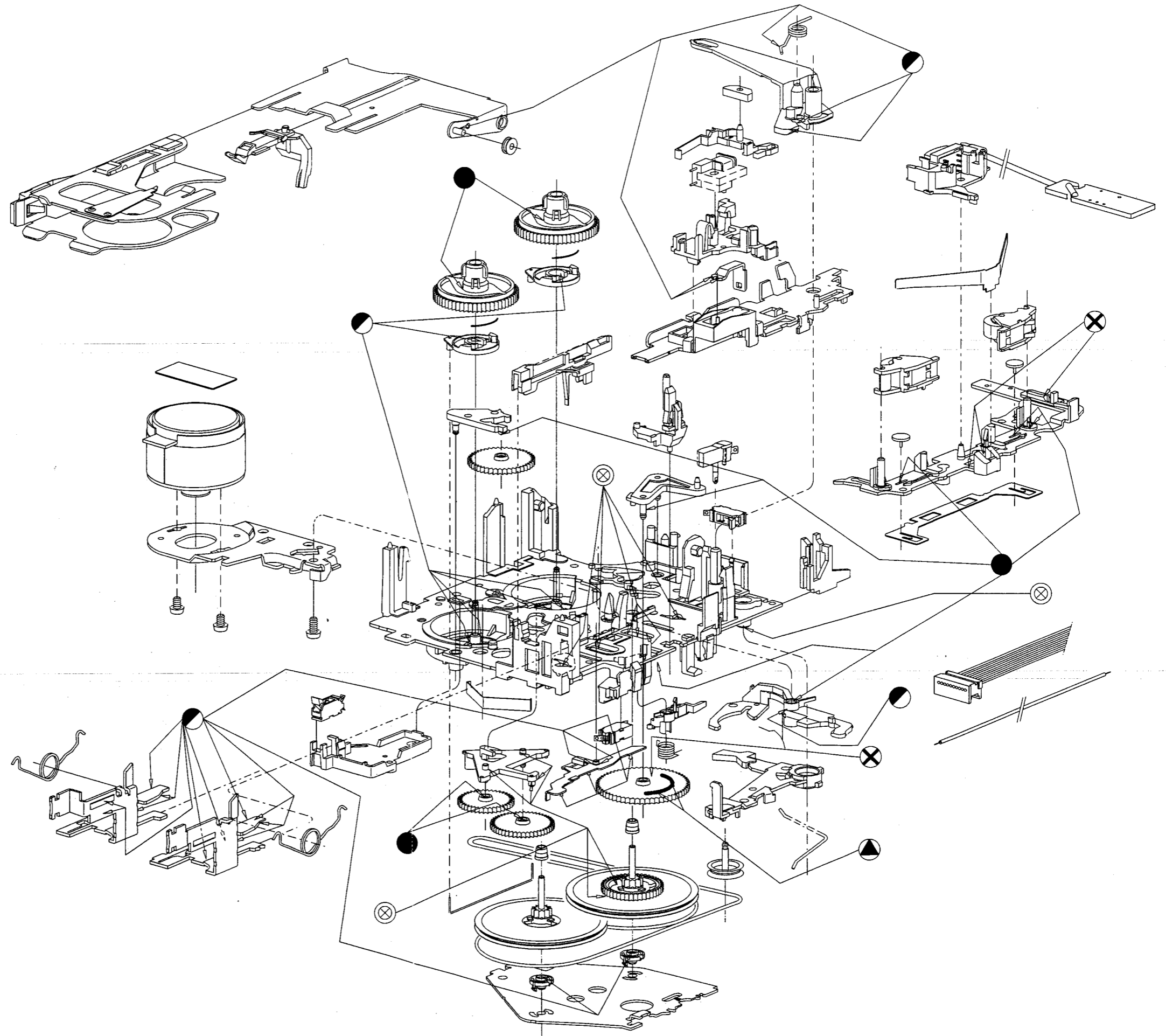


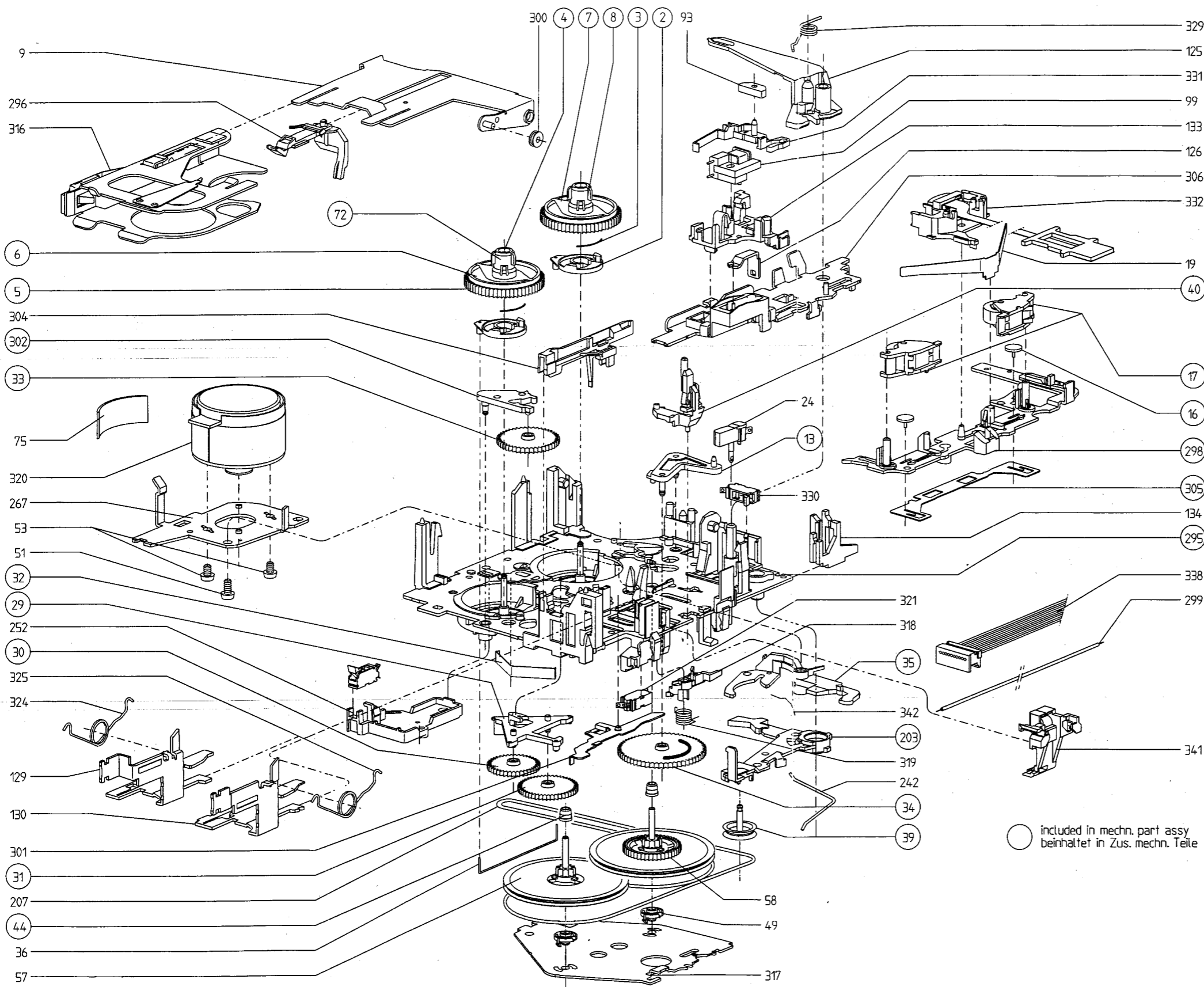
Fig. M

LUBRICATION OVERVIEW



- Contact Oil
PDP 65
- ⊗ Grease
Topas L30
- ◐ Grease
SM 30 TF
- ⊗ Grease
Gleitmo 585 K
- ▲ Grease 4

EXPLODED VIEW



PARTS LISTS

2/3	4822 466 70527	Disc assy
4/5/6/7/8	4822 466 70526	Coupling felt assy white
4/5/6/7/72	4822 528 10898	Coupling felt assy black
9	4822 466 81479	Cassette lift
16	4822 528 80983	Fixation
17	4822 403 40157	Pressure roller assy
24	4822 276 13081	Play switch
29/30/31	4822 522 20327	Gear assy
32	4822 492 71468	Leaf spring
35	4822 403 52031	Gear arm
36	4822 492 90076	Lever
39	4822 528 81144	Pulley
40	4822 403 10225	Holder
44	4822 520 30406	Bush bearing
49	4822 520 30407	Excentric
53	4822 502 12548	Special screw
54/207	4822 358 30405	Driving belt
58	4822 528 81517	Fly wheel assy
93	4822 281 60165	Anchor plate
99	4822 281 50113	Solenoid magnet
125	4822 403 71287	Lever eject
126	4822 403 71286	Lever blocking
133	4822 466 83076	Plate solenoid II
203	4822 404 21169	Arm
296	4822 256 92317	Holder cassette
298	4822 403 71282	Head support bracket
304	4822 462 30632	Band conductor
306	4822 403 71283	Push button rod
318	4822 403 71284	Latch
319	4822 492 42774	Spring latch
320	4822 361 21764	Motor MSI-5 CCW
321	4822 276 13617	Switch mute
330	4822 276 13616	Switch track
331	4822 403 71285	Lever solenoid
332	4822 249 30227	Magnetic head

4822 691 10438 Deck LCA2.4 complete

Lubrication greases/oils

4822 390 10107	Isoflex PDP 65, 30ML
4822 390 20128	Isoflex TOPAS L 30
4822 390 20116	Grease 004, 100G CA N
4822 390 20128	Isoflex TOPAS L 30

Service
Service
Service

Supplement



PHIL -05363

Service Manual

12 V

This supplement should be used together with the LCA 2.4 Service Manual with service code: 4822 725 23523.

4728

This supplement contains: technical data, general information, connector and switch overviews, exploded views and partslists for both the LCA 5.2 and LCA 5.4 tape decks.

For all parts not mentioned here, refer to the LCA 2.4 Service Manual.

TECHNICAL DATA

Operating voltage	: 9 - 16V (nom. 13.2V)
Tape speed	: 4.76cm/sec \pm 0.5%
Wow & Flutter	: \leq 0.35% RMS (+10 - +45°C)
Crosstalk (track 2-3)	: < -40dB
Fast wind time	: \leq 115sec (C-60)
Number of tracks	: 2x2
Channel separation (Tracks 1-2/3-4)	: > 35dB



PHILIPS

5363

GENERAL

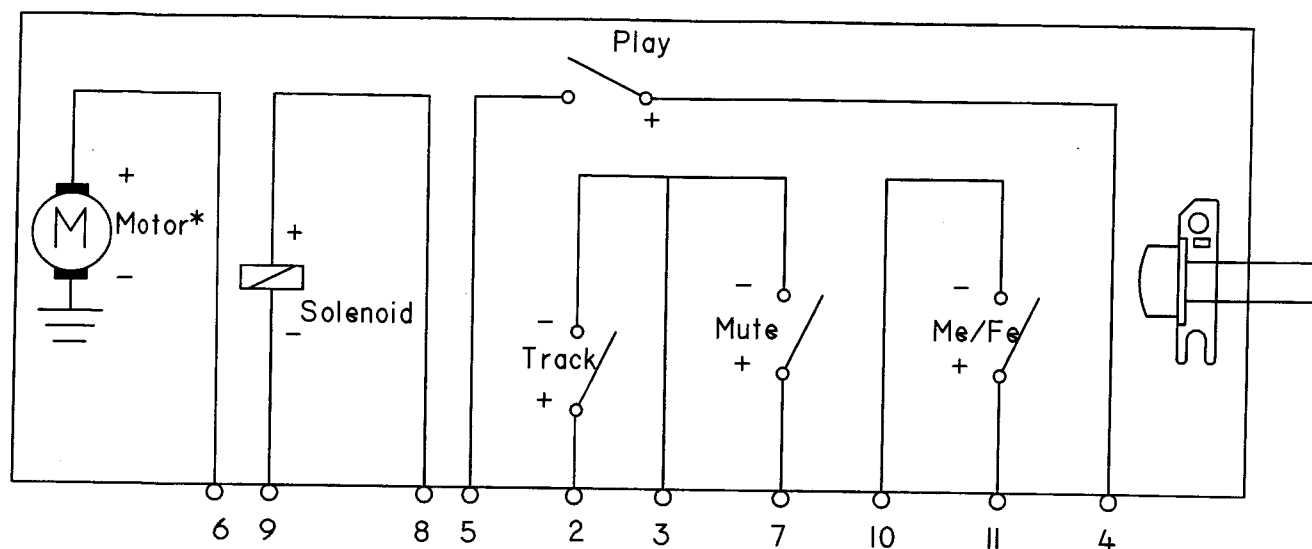
The differences between the LCA 2.4 and **LCA 5.2** are:

- capstan motor at left side instead of rear
- no "Key-Off" standby
- no Automatic Music sensor system
- no Metal / Ferro tape selector switch
- interface connector
- changed position of wind buttons

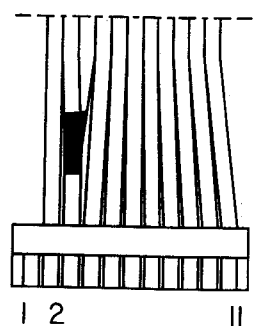
The differences between the LCA 2.4 and **LCA 5.4** are:

- capstan motor at left side instead of rear
- interface connector
- changed position of wind buttons

LCA 5.4 CONNECTOR AND SWITCH OVERVIEW

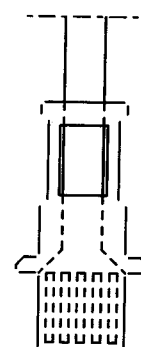


*Remark: Motor - internally connected to chassis!



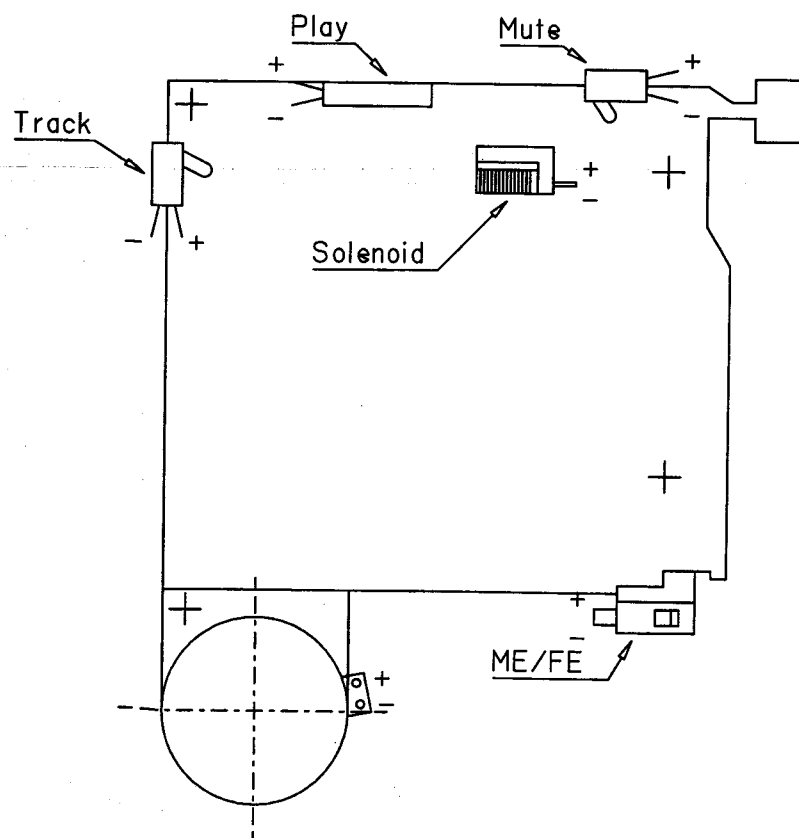
← round conductor flat cable

← connector



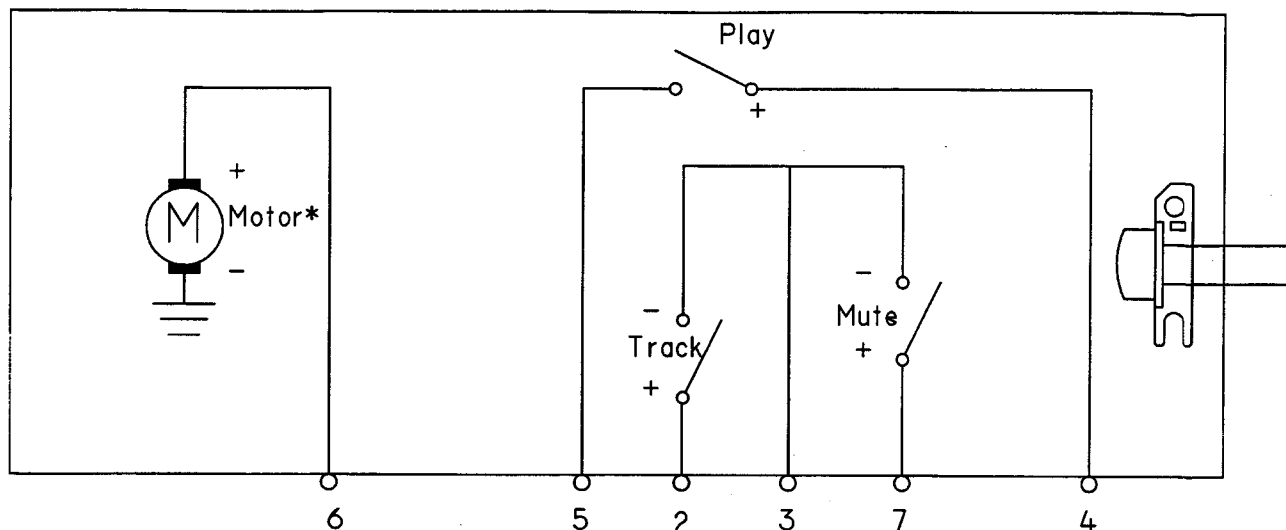
4321COM

COM common
1 left forward
2 right forward
3 right reverse
4 left reverse

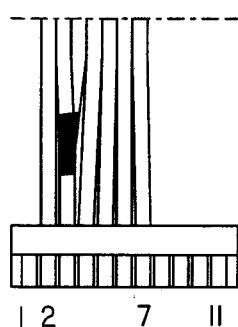


	colour	function
1	--	---
2	black	+Track Sw
3	red brown	COMMON
4	orange	+14V
5	yellow	Play Sw
6	green	Motor
7	blue	Mute SW
8	violet	+ Solenoid
9	grey	- Solenoid
10	white	- Me/Fe
11	black	+ Me/Fe

LCA 5.2 CONNECTOR AND SWITCH OVERVIEW

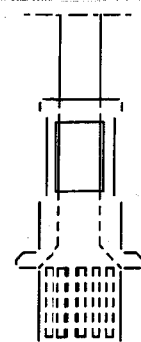


*Remark: Motor – internally connected to chassis!



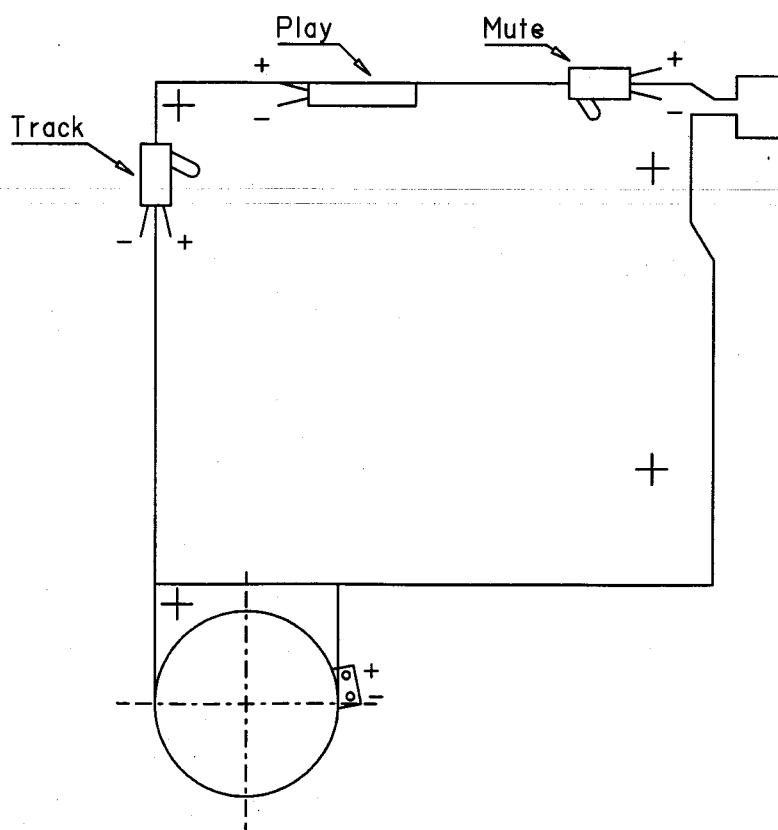
← round conductor flat cable

← connector



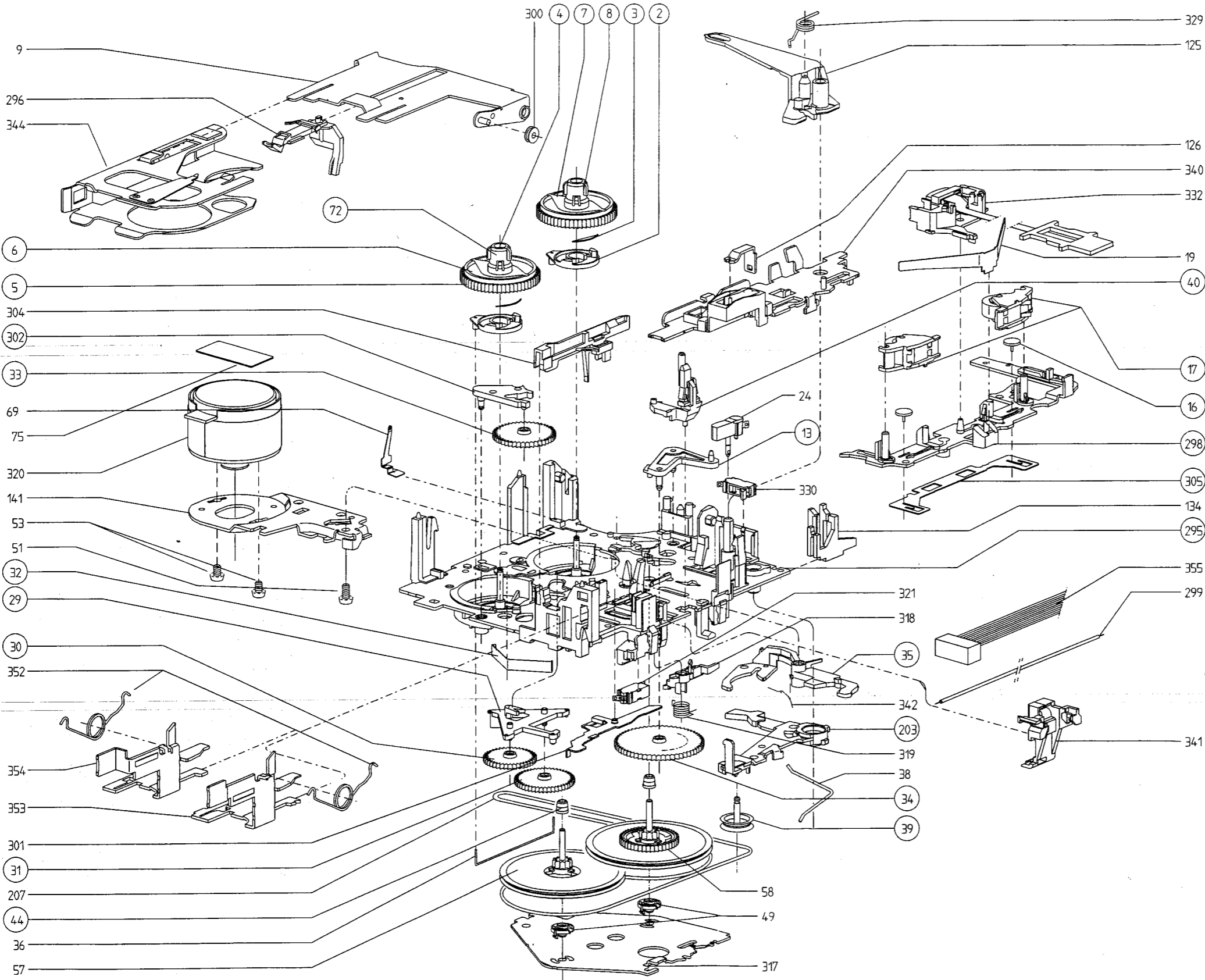
43 21COM

COM common
1 left forward
2 right forward
3 right reverse
4 left reverse



	colour	function
1	--	--
2	black	+Track Sw
3	red brown	COMMON
4	orange	+14 V
5	yellow	Play Sw
6	green	Motor
7	blue	Mute SW
8	--	--
9	--	--
10	--	--
11	--	--

LCA 5.2 EXPLODED VIEW



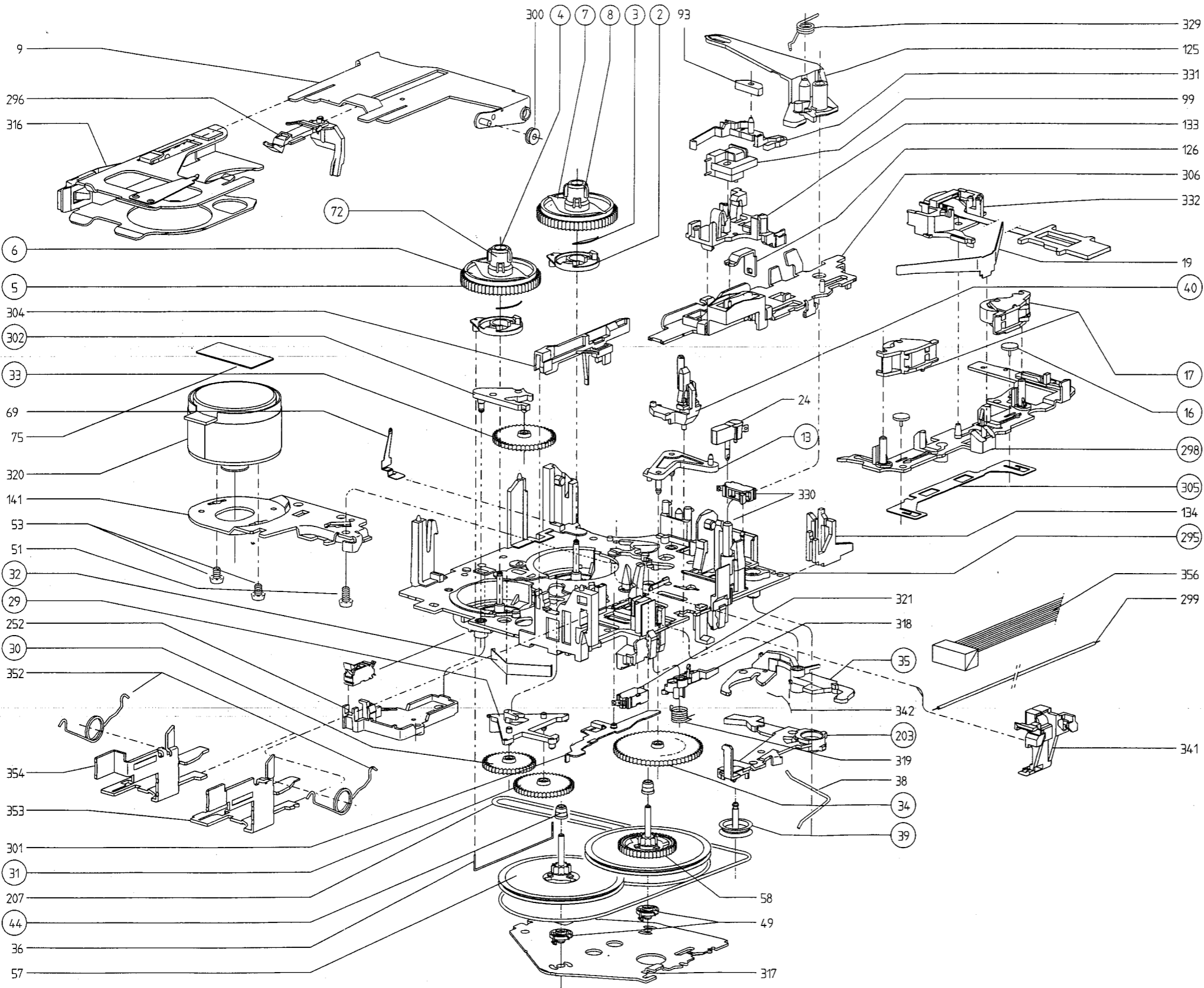
PARTS LIST LCA5.2

2/3	4822 466 70527	Disc assy
4/5/6/7/8	4822 466 70526	Coupling felt assy white
4/5/6/7/2	4822 528 10898	Coupling felt assy black
9	4822 466 81479	Cassette lift
16	4822 528 80983	Fixation
17	4822 403 40157	Pressure roller assy
24	4822 276 13081	Play switch
29/30/31	4822 522 20327	Gear assy
32	4822 492 71468	Leaf spring
35	4822 403 52031	Gear arm
36	4822 492 90076	Lever
39	4822 528 81144	Pulley
40	4822 403 10225	Holder
44	4822 520 30406	Bush bearing
49	4822 520 30407	Excentric
53	4822 502 12548	Special screw
57	4822 528 80985	Flywheel assy
58	4822 528 81517	Flywheel assy
125	4822 403 71287	Lever eject
126	4822 403 71286	Lever blocking
203	4822 404 21169	Arm
207	4822 358 31136	Driving belt
296	4822 256 92317	Holder cassette
298	4822 403 71282	Head support bracket
300	4822 528 10942	Lift roller
301	4822 466 10758	Plate logic
304	4822 462 30632	Band conductor
305	4822 466 10759	Control plate
318	4822 403 71284	Latch
319	4822 492 42774	Spring latch
320	4822 361 21764	Motor MSI-5 CCW
321	4822 276 13617	Switch mute
330	4822 276 13616	Switch track
332	4822 249 30227	Magnetic lead
340	4822 402 10106	Push button rod
344	4822 256 10151	Cassette carrier assy
	4822 691 10466	Deck LCA5.2 complete

Lubrication greases/oils

4822 390 10107	Isotex PDP 65, 30ML
4822 390 10133	Grease 58K
4822 390 10134	Grease L3TF
4822 390 20116	Grease 004, 100G CAN
4822 390 20128	Isotex TOPAS L 30

LCA 5.4 EXPLODED VIEW



PARTS LIST LCA5.4

2/3	4822 466 70527	Disc assy
4/5/6/7/8	4822 466 70526	Coupling felt assy white
4/5/6/7/72	4822 528 10898	Coupling felt assy black
9	4822 466 81479	Cassette lift
16	4822 528 80983	Fixation
17	4822 403 40157	Pressure roller assy
24	4822 276 13081	Play switch
29/30/31	4822 522 20327	Gear assy
32	4822 492 71468	Leaf spring
35	4822 403 52031	Gear arm
36	4822 492 90076	Lever
39	4822 528 81144	Pulley
40	4822 403 10225	Holder
44	4822 520 30406	Bush bearing
49	4822 520 30407	Excentric
53	4822 502 12548	Special screw
57	4822 528 80985	Flywheel assy
58	4822 528 81517	Flywheel assy
93	4822 281 60165	Anchor plate
99	4822 281 50113	Solenoid magnet
125	4822 403 71287	Lever eject
126	4822 403 71286	Lever blocking
133	4822 466 83076	Plate solenoid II
203	4822 404 21169	Arm
207	4822 358 31136	Driving belt
296	4822 256 92317	Holder cassette
298	4822 403 71282	Head support bracket
300	4822 528 10942	Lift roller
301	4822 466 10758	Plate logic
304	4822 462 30632	Band conductor
305	4822 466 10759	Control plate
306	4822 403 71283	Push button rod
318	4822 403 71284	Latch
319	4822 492 42774	Spring latch
320	4822 361 21764	Motor MSI-5 CCW
321	4822 276 13617	Switch mute
330	4822 276 13616	Switch track/ME-FE
331	4822 403 71285	Lever solenoid
332	4822 249 30227	Magnetic head
344	4822 256 10151	Cassette carrier assy
	4822 691 10467	Deck LCA5.4 complete

Lubrication greases/oils

4822 390 10107	Isoflex PDP 65, 30ML
4822 390 10133	Grease 585K
4822 390 10134	Grease L30TF
4822 390 20116	Grease 004, 100G CAN
4822 390 20128	Isoflex TOPAS L 30